SUPPLEMENT NO 5

WOOD TRUSSES

STRESS COEFFICIENTS
LENGTH COEFFICIENTS
&
ANGLES

A
NATIONAL LUMBER MANUFACTURERS ASSOCIATION
PUBLICATION
1937

For a truss within the limitations stated, the total stress in any member, the length of any member between joint centers, and the angle between any two members may readily be found from the tables of coefficients given herein. This information was prepared by Frank J. Hanrahan and Mary C. Ahern.

CONTENTS

GLOSSARY OF TERMS

The following terms are defined in the limited sense in which they are used in this publication:

"Panel point load" is the exterior load applied at any one joint of the top or bottom chord of a truss.

"Joint" is any point in a truss where two or more members meet.

"Panel length" is the distance between any two consecutive joint centers in either the top or bottom chords.

"Joint center" is the point of intersection of the center lines of all the members meeting at any one joint.

"Top chord" is the one or more members which form the upper boundary of the truss.

"Bottom chord" is the one or more members which form the lower boundary of the truss.

"Member" is the aggregate of one or more pieces of structural material which lie between any two adjacent joints of a truss.

"Chord member" is a member which forms part of either the top or bottom chords.

"Web member" is a member which lies between the top and bottom chords.

"Stress coefficient" is a numerical constant which, when multiplied by the panel point load, gives the total axial stress in a truss member.

"Length coefficient" is a numerical constant which, when multiplied by the height of truss, gives the length of a truss member between joint centers.

"Pitch" is the ratio of "height of truss" to "span length" $\frac{H}{L} = \frac{1}{n}$ when both are expressed in the same linear units.

"Height of truss" is the vertical distance at midspan from the joint center at the ridge of a pitched truss, or from the center line of the top chord of a flat truss, to the center line of the bottom chord.

"Span length" is the horizontal distance between the joint centers of the two joints located at the extreme ends of the truss.

LIMITATIONS

The stress coefficients in the tables are based on the assumptions that:

1. All loads act vertically. Non-vertical loads must be converted to assumed vertical loads or the axial stress in the member caused by such loads must be found by other means.
2. Load is applied to the truss at panel points only. The axial stresses (but not the additional bending stresses) induced in the members by uniformly distributed inter-panel point loads may be found by converting such loads to panel point loads and using the stress coefficients given.
3. The lengths of all panels comprising any one loaded chord are equal.
4. All panel point loads on any one chord are equal; with the exception that:
   (a) For all except the top chord loadings of the Warren trusses, the panel point load at an end joint is one-half of that at an intermediate joint.
   (b) For the top chord loadings of Warren trusses:
      (1) the panel point load of an end joint is one-fourth, and at the joint next to the end is three-fourths of that at an intermediate joint, and
      (2) the length of the end panel is one-half of that of an intermediate panel.

This represents the common loading when all vertical roof or ceiling loads are brought to the truss by means of purlins or beams located at panel points.

NOTATIONS

H - height of truss in feet or inches.

L - span length of truss in feet or inches.

n - the ratio of "span length" to "height of truss" with height and span expressed in the same units; i.e., either feet or inches.

N - A frequently repeated combination of mathematical terms which, for convenience in computation, has been given a special notation. (It does not necessarily represent the same mathematical expression for the different types of trusses).

P - The panel point load applied at a joint of the top chord.

p - The panel point load applied at a joint of the bottom chord.

℄ - Center line about which the truss is symmetrical.

① , ② , ③ , etc. on the sketch, and 1, 2, 3, etc. under column heading "member" in the table, designate individual members of the truss.

USE OF TABLES

Stress coefficients, length coefficients, and angles of members, for any one type of truss with a given number of panels, are shown on the same sheet. Conversion tables which will assist in converting inches and fractions of an inch to decimals of a foot, and fractions of an inch to decimals of an inch, are given on the last page of this manual.

Values of n, P, and p

Select type of truss and ratio of "span length" to "height of truss", n. In subsequent computations, use coefficients and angles in the vertical columns under "value of n " chosen. If a "value of n ", other than those given on the table, is desired, compute the coefficients and angles from the "General Formulas" in the columns at the extreme right of the tables. Since the pitch of a true Belgian truss is fixed by the number of panels, only one "value of n "is possible for each Belgian truss.

Determine the top and bottom panel point loads P and p by standard principles of mechanics.

Stress Coefficients

To find the total axial tensile or compressive stress in any member when the truss is loaded at:

1. TOP - Multiply P by the stress coefficient in the column under P.
2. BOTTOM - Multiply p by the stress coefficient in the column under p.
3. TOP AND BOTTOM - Add stresses determined in 1 and 2 above.

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS.

Members in compression are designated by heavy lines on the sketch and by minus signs before the tabulated stress coefficients.

Length of Members

To find the length of any member between joint centers, multiply H, the height of the truss, by the length coefficient under H.

Angles Between Members

The angles in degrees between members for use in determining bolt and connector loads, can be taken directly from the table; e.g., 1 - 9 under column heading "Members" indicates that the angle is measured between member ① and member ⑨ shown on the sketch.

Reactions

For each truss the gross reaction, i.e., the total vertical load which the wall or column supporting one end of the truss must carry, is shown on the sketch of the truss. If the rafters or ceiling joists rest directly on the wall, the loads used for determining the bearing areas at the ends of the truss should be modified accordingly.

Non-essential Truss Members

Members which are not essential for a complete truss, are shown on the sketches at the end of certain trusses by dotted lines. They are included to show possible variations in the shape of the truss.

In the Fink and Fan types of trusses, the vertical member at the center is not necessary for the stability of the truss, and therefore may be omitted if desired. In the larger spans it is customary to include this member to provide a center support for the central bottom chord member of the truss.

In the triangular Pratt and flat Howe trusses, the vertical member at the center may be omitted if there is no bottom chord load.

ADDITIONAL INFORMATION

Further information pertinent for truss design may be obtained from the National Lumber Manufacturers Association, and from the Regional Lumber Manufacturers Associations.

REFERENCES

"Wood Structural Design Data", National Lumber Manufacturers Association.

"Working Stresses for Structural Lumber", National Lumber Manufacturers Association

"Bolted Wood Joints - Safe Loads on Common Bolts", National Lumber Manufacturers Association.

"Maximum Spans for Joists and Rafters", National Lumber Manufacturers Association

"Wood Columns - Safe Loads", National Lumber Manufacturers Association

"Lumber Grade-Use Guide", National Lumber Manufacturers Association.

"Manual of Timber Connector Construction", Timber Engineering Company, Washington, D.C.

"Wood Handbook", (Forest Products Laboratory), U.S. Dept. of Agriculture.

"Wood Construction", by National Committee on Wood Utilization, McGraw-Hill Book Company.

"Wood Construction", by Voss and Varney, John Wiley & Sons.

"Timber Design and Construction", by Jacoby and Davis, John Wiley & Sons.

"Architects' and Builders' Handbook" by Kidder and Parker, John Wiley & Sons.

"Building Code", recommended by the National Board of Fire Underwriters.

"Uniform Building Code", recommended by the Pacific Coast Building Officials Conference.

"Douglas Fir Use Book - Structural Data and Design Tables", West Coast Lumbermen's Association.

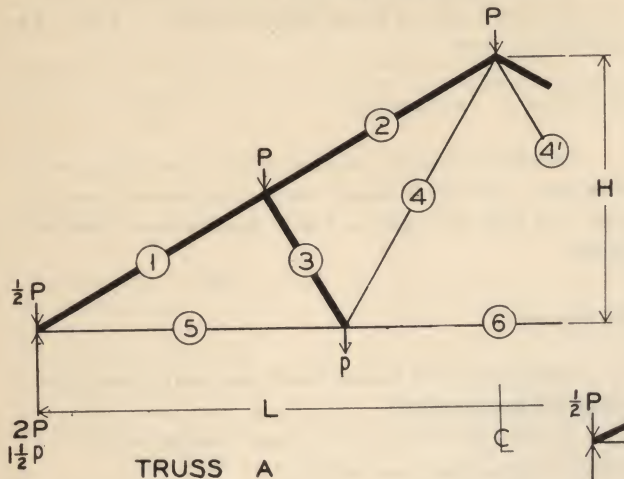
"Southern Pine Manual of Standard Wood Construction", Southern Pine Association.

"Wood Bridges and Trestles", Reports of Committee VII, American Railway Engineering Association.

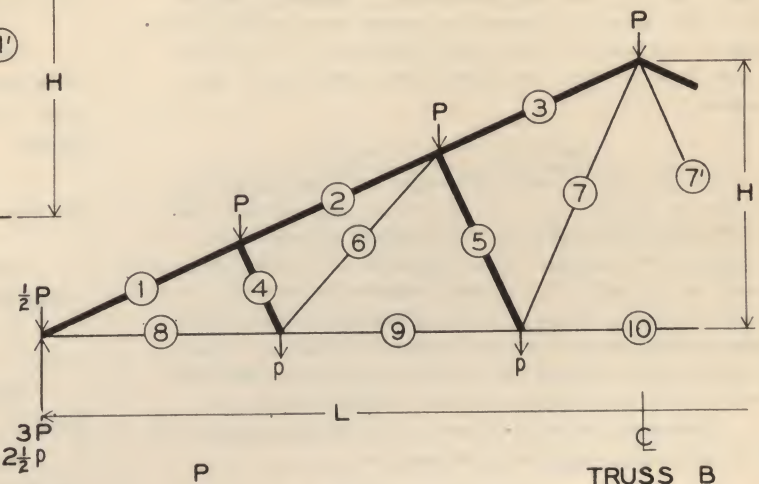
"Structural Members and Connections" by Hool & Kinne, McGraw-Hill Book Company.

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS & ANGLES - TRIANGULAR BELGIAN

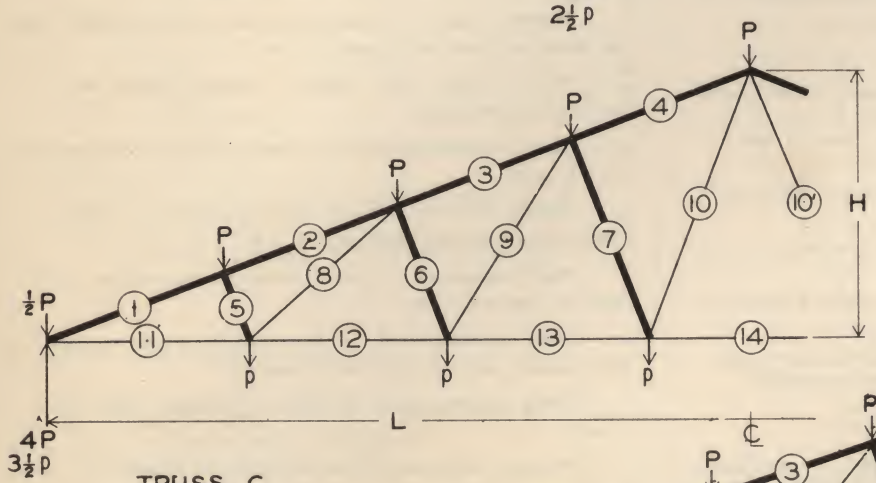
ONE PANEL LESS AT BOTTOM THAN AT TOP



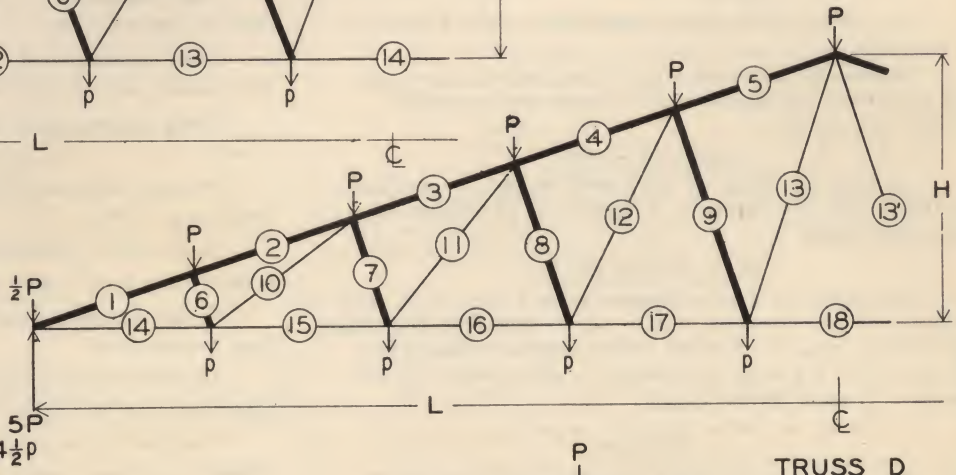
TRUSS A



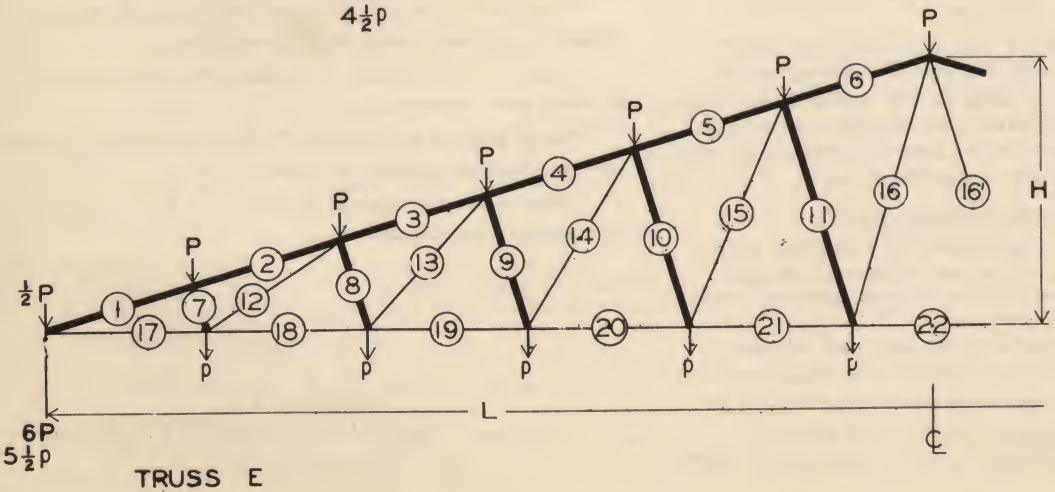
TRUSS B



TRUSS C



TRUSS D



TRUSS E

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR BELGIAN

ONE PANEL LESS AT BOTTOM THAN AT TOP

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P.
2. BOTTOM - multiply the panel point load p by the stress coefficient under p.
3. TOP & BOTTOM - add stresses determined in 1 and 2 above.

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS.

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

TRUSS A	TRUSS B	TRUSS C	TRUSS D	TRUSS E
Pitch = H/L = $1/6\sqrt{3}$	Pitch = H/L = $1/10\sqrt{5}$	Pitch = H/L = $1/14\sqrt{7}$	Pitch = H/L = 1/6	Pitch = H/L = $1/22\sqrt{11}$
n = L/H = $2\sqrt{3}$ = 3.4642	n = L/H = $2\sqrt{5}$ = 4.4722	n = L/H = $2\sqrt{7}$ = 5.2915	n = L/H = 6	n = L/H = $2\sqrt{11}$ = 6.6332
Roof Slope = 30° 00'	Roof Slope = 24° 07'	Roof Slope = 20° 42'	Roof Slope = 18° 26'	Roof Slope = 16° 47'

STRESS COEFFICIENTS

MEMBER	P	p	MEMBER	P	p	MEMBER	P	p	MEMBER	P	p	MEMBER	P	p
1	-3.00	-2.00	1	-6.12	-4.90	1	-9.90	-8.48	1	-14.23	-12.65	1	-19.05	-17.32
2	-2.50	-2.00	2	-5.72	-4.90	2	-9.55	-8.48	2	-13.91	-12.65	2	-18.76	-17.32
3	-0.87	0	3	-4.29	-3.67	3	-7.95	-7.07	3	-12.17	-11.07	3	-16.89	-15.59
4	0.87	1.15	4	-0.91	0	4	-6.36	-5.66	4	-10.44	- 9.49	4	-15.01	-13.86
5	2.60	1.73	5	-1.37	-0.55	5	-0.94	0	5	- 8.70	- 7.91	5	-13.13	-12.12
6	1.73	1.15	6	1.12	1.34	6	-1.40	-0.53	6	- 0.95	0	6	-11.26	-10.39
			7	1.37	1.64	7	-1.87	-1.07	7	- 1.42	- 0.53	7	- 0.96	0
			8	5.59	4.47	8	1.32	1.51	8	- 1.90	- 1.05	8	- 1.44	- 0.52
			9	4.47	3.58	9	1.55	1.77	9	- 2.37	- 1.58	9	- 1.91	- 1.04
			10	3.35	2.68	10	1.87	2.14	10	1.50	1.67	10	- 2.39	- 1.57
						11	9.26	7.94	11	1.71	1.90	11	- 2.87	- 2.09
						12	7.94	6.80	12	2.01	2.24	12	1.66	1.81
						13	6.61	5.67	13	2.37	2.64	13	1.85	2.02
						14	5.29	4.54	14	13.50	12.00	14	2.14	2.34
									15	12.00	10.67	15	2.49	2.71
									16	10.50	9.33	16	2.87	3.13
									17	9.00	8.00	17	18.24	16.58
									18	7.50	6.67	18	16.58	15.08
												19	14.92	13.57
												20	13.27	12.06
												21	11.61	10.55
												22	9.95	9.05

LENGTH COEFFICIENTS

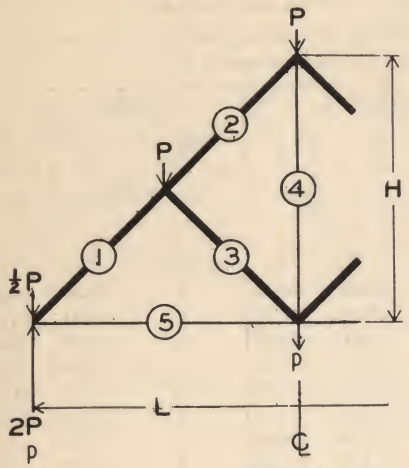
MEMBER	H	MEMBER	H	MEMBER	H	MEMBER	H	MEMBER	H
1, 2	1.000000	1, 2, 3,	0.816497	1, 2, 3, 4	0.707107	1,2,3,4,5,8,	0.632456	1,2,3,4,5,6	0.577350
3	0.577350	4	0.365148	5	0.267261	6	0.210819	7	0.174078
4, 5, 6	1.154701	5	0.730296	6	0.534522	7	0.421637	8	0.348155
		7	1.095445	7	0.801784	9	0.843274	9	0.522233
		8, 9, 10	0.894427	8,11,12,13,14	0.755929	11	0.760117	10	0.696311
				9	0.886405	12	0.894427	11	0.870388
				10	1.069044	13	1.054092	12, 17, 18, 19, 20, 21, 22	0.603023
						10,14,15,16,17, 18	0.666667	13	0.674200
								14	0.778499
								15	0.904534
								16	1.044466

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS

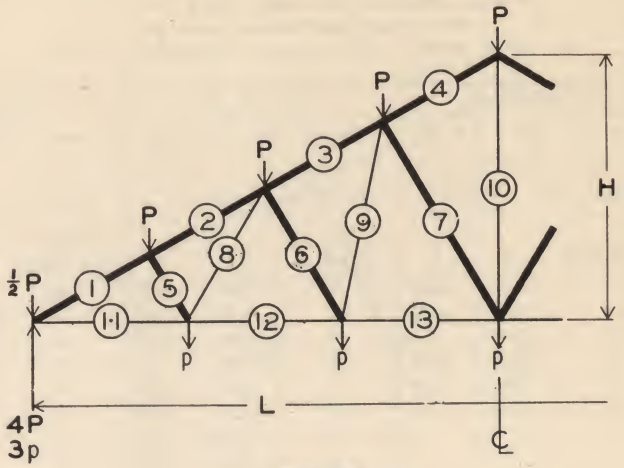
MEMBER	DEG.	MEMBER	DEG.	MEMBER	DEG.	MEMBER	DEG.	MEMBER	DEG.
1-5, 2-4	30	1-8, 2-6	24	1-11, 2-8	21	1-14, 2-10	18	1-17, 2-12	17
3-4, 3-5, 4-6, 4-4	60	3-7	42	3- 9	37	3-11	34	3-13	31
1-3, 2-3	90	4-6, 4-8, 5-6, 5-9, 7-10	66	4-10	49	4-12, 8-12, 9-12	45	4-14	42
		5-7, 6-9, 7-7	48	5-8, 5-11, 6-8, 6-12, 7-13	69	5-13	53	5-15	50
		1-4, 2-4, 3-5	90	6- 9, 7- 9	53	6-10, 6-14, 7-10, 7-15, 8-16, 9-17	72	6-16	56
				7-10	41	7-11, 8-11	56	7-12, 7-17, 8-12, 8-18, 9-19, 10-20, 11-21, 16-22	73
				8-12	42	9-13	37	8-13, 9-13, 14-20	59
				9-13	58	10-15	36	9-14, 10-14, 13-19	48
				10-14	70	11-16	52	10-15, 11-15	40
				1-5, 2-5, 3-6, 4-7	90	12-17	63	11-16, 12-18, 16-16	34
				10-10	40	13-18	71	15-21	67
						1-6, 2-6, 3-7, 4-8, 5-9	90	1- 7, 2- 7, 3- 8, 4- 9, 5-10, 6-11	90
						13-13	38		

TRUSSES- STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES – TRIANGULAR BELGIAN

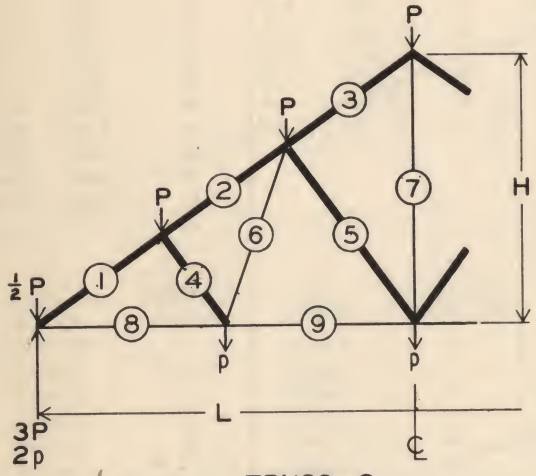
TWO PANELS LESS AT BOTTOM THAN AT TOP



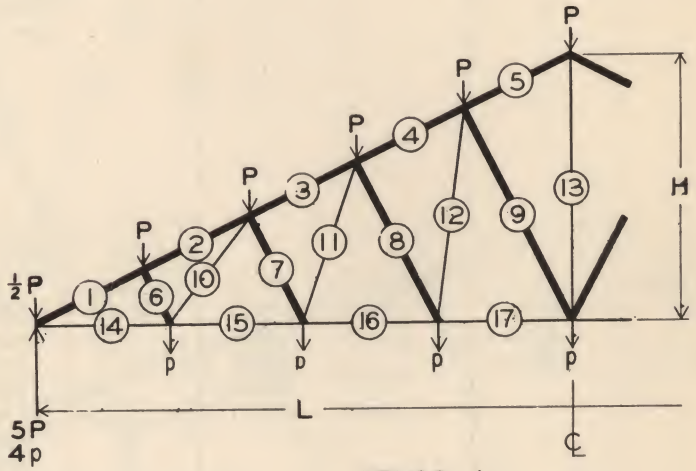
TRUSS F



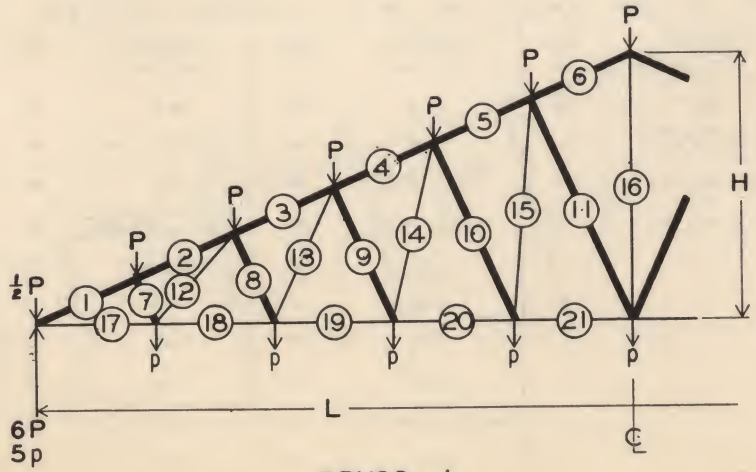
TRUSS H



TRUSS G



TRUSS I



TRUSS J

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR BELGIAN

TWO PANELS LESS AT BOTTOM THAN AT TOP

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P.
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above.

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS.

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H

TRUSS F	TRUSS G	TRUSS H	TRUSS I	TRUSS J
Pitch = H/L = 1/2	Pitch = H/L = 1/4 $\sqrt{2}$	Pitch = H/L = 1/6 $\sqrt{3}$	Pitch = H/L = 1/4	Pitch = H/L = 1/10 $\sqrt{5}$
n = L/H = 2	n = L/H = 2 $\sqrt{2}$ = 2.8284	n = L/H = 2 $\sqrt{3}$ = 3.4642	n = L/H = 4	n = L/H = 2 $\sqrt{5}$ = 4.4722
Roof Slope = 45°	Roof Slope = 35° 16'	Roof Slope = 30°	Roof Slope = 26° 34'	Roof Slope = 24° 07'

STRESS COEFFICIENTS

MEMBER	P	p	MEMBER	P	p	MEMBER	P	p	MEMBER	P	p	MEMBER	P	p
1	-2.12	-0.71	1	-4.33	-2.60	1	-7.00	-5.00	1	-10.06	-7.83	1	-13.47	-11.02
2	-1.41	-0.71	2	-3.75	-2.60	2	-6.50	-5.00	2	- 9.62	-7.83	2	-13.06	-11.02
3	-0.71	0	3	-2.60	-1.73	3	-5.25	-4.00	3	- 8.27	-6.71	3	-11.64	- 9.80
4	1.00	1.00	4	-0.82	0	4	-4.00	-3.00	4	- 6.93	-5.59	4	-10.21	- 8.57
5	1.50	0.50	5	-1.22	-0.61	5	-0.87	0	5	- 5.59	-4.47	5	- 8.78	- 7.35
			6	0.71	1.06	6	-1.30	-0.57	6	- 0.89	0	6	- 7.35	- 6.12
			7	2.00	2.00	7	-1.73	-1.15	7	- 1.34	-0.56	7	- 0.91	0
			8	3.54	2.12	8	0.87	1.15	8	- 1.79	-1.12	8	- 1.37	- 0.55
			9	2.83	1.77	9	1.15	1.53	9	- 2.24	-1.68	9	- 1.83	- 1.10
						10	3.00	3.00	10	1.00	1.25	10	- 2.28	- 1.64
						11	6.06	4.33	11	1.26	1.58	11	- 2.74	- 2.19
						12	5.20	3.75	12	1.61	2.02	12	1.12	1.34
						13	4.33	3.18	13	4.00	4.00	13	1.37	1.64
									14	9.00	7.00	14	1.71	2.05
									15	8.00	6.25	15	2.09	2.51
									16	7.00	5.50	16	5.00	5.00
									17	6.00	4.75	17	12.30	10.06
												18	11.18	9.17
												19	10.06	8.27
												20	8.94	7.38
												21	7.83	6.48

LENGTH COEFFICIENTS

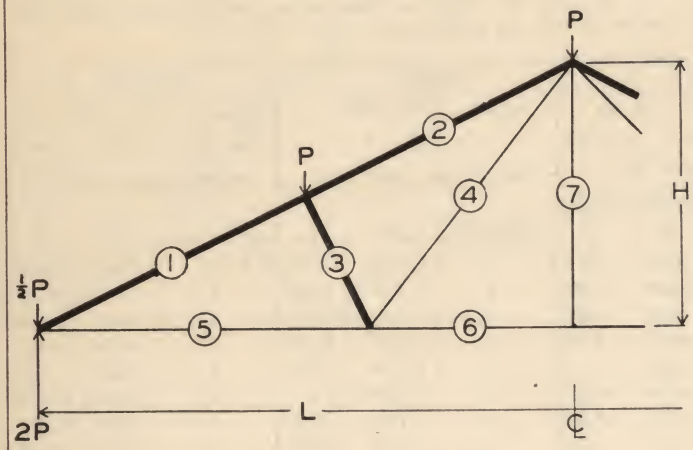
MEMBER	H	MEMBER	H	MEMBER	H	MEMBER	H	MEMBER	H
1, 2, 3	0.707107	1, 2, 3	0.577344	1, 2, 3, 4	0.500000	1,2,3,4,5,7	0.447214	1,2,3,4,5,6	0.408248
4, 5	1.000000	4	0.408248	5	0.288675	6	0.223607	7	0.182574
		5	0.816497	6,8,11,12,13	0.577350	8	0.670820	8	0.365149
		6, 8, 9	0.707107	7	0.866025	9	0.894427	9, 13	0.547723
		7	1.000000	9	0.763763	10,14,15,16,17	0.500000	10	0.730297
				10	1.000000	11	0.632456	11	0.912871
						12	0.806226	12, 17, 18, 19, 20, 21	0.447214
						13	1.000000	14	0.683130
								15	0.836660
								16	1.000000

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS

MEMBER	DEG.	MEMBER	DEG.	MEMBER	DEG.	MEMBER	DEG	MEMBER	DEG
1-5, 2-4, 3-4, 3-5	45	1-8, 2-6, 5-7	35	1-11, 2-8, 7-10	30	1-14, 2-10, 9-13	27	1-17, 2-12, 11-16	24
1-3, 2-3	90	3-7, 4-6, 4-8, 5-6, 5-9	55	3-9	49	3-11, 7-11, 8-11	45	3-13	42
		6-9	70	4-10, 5-8, 5-11, 6-8, 6-12, 7-13, 8-12	60	4-12	56	4-14	53
		1-4, 2-4, 3-5	90	6-9, 7-9	41	5-13, 6-10, 6-14, 7-10, 7-15, 8-16, 9-17	63	5-15	61
				9-13	79	8-12, 9-12	34	6-16, 7-12, 7-17, 8-12, 8-18, 9-19, 10-20, 11-21, 13-19	66
				1-5, 2-5, 3-6, 4-7	90	10-15	54	8-13, 9-13, 12-18	48
						11-16	72	9-14, 10-14	37
						12-17	83	10-15, 11-15	29
						1-6, 2-6, 3-7, 4-8, 5-9	90	14-20	77
								15-21	85
								1-7, 2-7, 3-8, 4-9, 5-10, 6-11	90

TRUSSES — STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR FINK

4 PANELS AT TOP



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

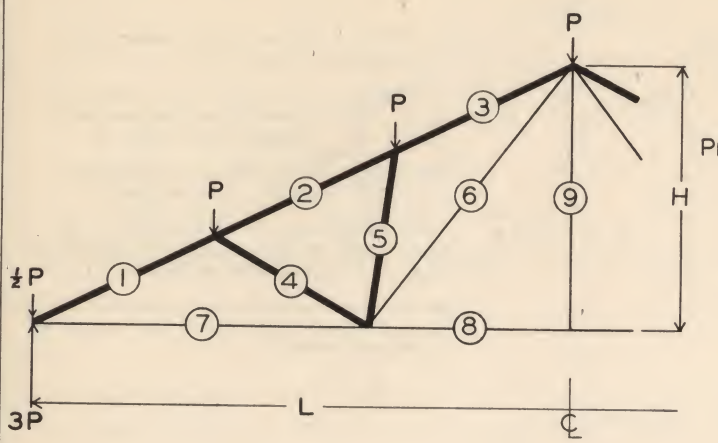
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n							GENERAL FORMULAS
	2	3	$2\sqrt{3}$	4	5	6	7	
STRESS COEFFICIENTS								
	P	P	P	P	P	P	P	P
1	-2.12	-2.70	-3.00	-3.35	-4.04	-4.74	-5.46	- 3/4 N
2	-1.41	-2.15	-2.50	-2.91	-3.67	-4.43	-5.19	- 1/N (3/4 n^2 + 1)
3	-0.71	-0.83	-0.87	-0.89	-0.93	-0.95	-0.96	- n/N
4	0.50	0.75	0.87	1.00	1.25	1.50	1.75	1/4 n
5	1.50	2.25	2.60	3.00	3.75	4.50	5.25	3/4 n
6	1.00	1.50	1.73	2.00	2.50	3.00	3.50	1/2 n
7	0	0	0	0	0	0	0	0
LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
1, 2	0.707107	0.901388	1.000000	1.118034	1.346291	1.581139	1.820027	1/4 N
3	0.707107	0.600925	0.577367	0.559017	0.538516	0.527046	0.520008	1/2 N/n
4, 5	1.000000	1.083333	1.154734	1.250000	1.450000	1.666667	1.892857	1/4 N^2/n
6	0.000000	0.416667	0.577250	0.750000	1.050000	1.333333	1.607143	1/4 (n - 4/n)
7	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
1-5, 2-4	45	34	30	27	22	18	16	2/n = tan a
4-6	90	68	60	54	44	36	32	2a
3-4, 3-5	45	56	60	63	68	72	74	90 - a
4-7	0	22	30	36	46	54	58	90 - 2a
1-3, 2-3, 6-7	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR FAN

6 PANELS AT TOP



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

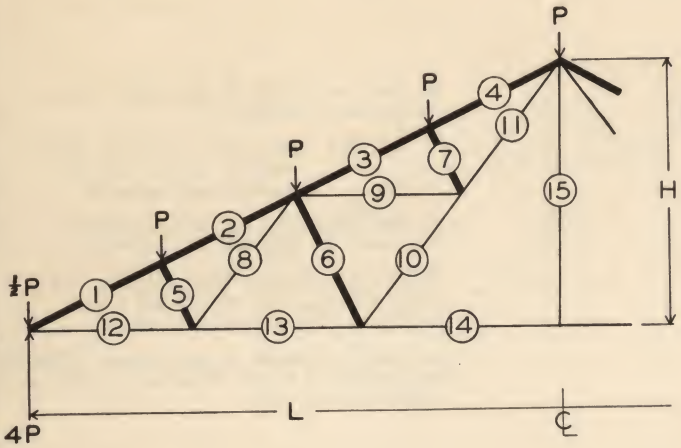
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n							GENERAL FORMULAS
	2	3	$2\sqrt{3}$	4	5	6	7	
STRESS COEFFICIENTS								
	P	P	P	P	P	P	P	P
1	-3.54	-4.51	-5.00	-5.59	-6.73	-7.91	-9.10	$-5/4\ N$
2	-2.59	-3.54	-4.00	-4.55	-5.59	-6.64	-7.70	$-\frac{13N^2 - 16}{12N}$
3	-2.12	-3.40	-4.00	-4.70	-5.99	-7.27	-8.55	$-\frac{5n^2 + 4}{4N}$
4	-0.75	-0.93	-1.00	-1.07	-1.21	-1.34	-1.48	$-\frac{n\sqrt{n^2 + 36}}{6N}$
5	-0.75	-0.93	-1.00	-1.07	-1.21	-1.34	-1.48	$-\frac{n\sqrt{n^2 + 36}}{6N}$
6	1.00	1.50	1.73	2.00	2.50	3.00	3.50	$1/2\ n$
7	2.50	3.75	4.33	5.00	6.25	7.50	8.75	$5/4\ n$
8	1.50	2.25	2.60	3.00	3.75	4.50	5.25	$3/4\ n$
9	0	0	0	0	0	0	0	0
LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
1, 2, 3	0.471405	0.600925	0.666667	0.745356	0.897527	1.054093	1.213352	$1/6\ N$
4, 5	0.745356	0.671855	0.666686	0.671855	0.700991	0.745356	0.799039	$1/12\ N\left(\frac{\sqrt{n^2 + 36}}{n}\right)$
6, 7	1.000000	1.083333	1.154734	1.250000	1.450000	1.666667	1.892857	$1/4\ N^2/n$
8	0.000000	0.416667	0.577250	0.750000	1.050000	1.333333	1.607150	$1/4\ (n - 4/n)$
9	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
1-7, 3-6	45	34	30	27	22	18	16	$2/n = \tan a$
2-4, 2-5	72	63	60	56	50	45	41	$6/n = \tan b$
6-8	90	68	60	54	44	36	32	$2a$
6-9	0	22	30	36	46	54	58	$90 - 2a$
4-7, 5-6	27	29	30	29	28	27	25	$b - a$
1-4, 3-5	108	117	120	124	130	135	139	$180 - b$
4-5	36	54	60	68	80	90	98	$180 - 2b$
8-9	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR FINK

8 PANELS AT TOP



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

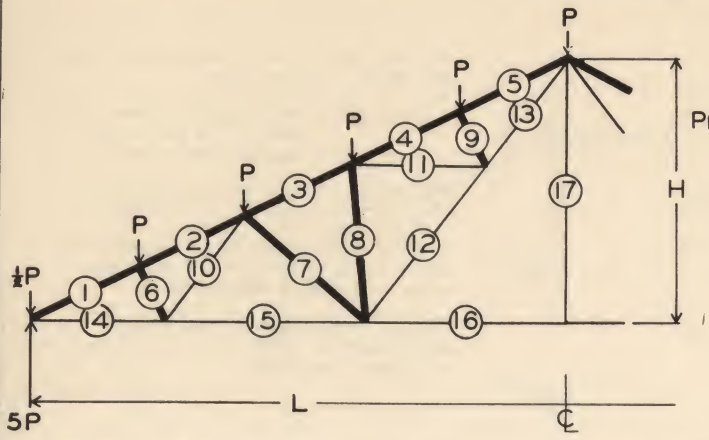
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n							GENERAL FORMULAS
	2	3	$2\sqrt{3}$	4	5	6	7	
STRESS COEFFICIENTS								
	P	P	P	P	P	P	P	P
1	-4.95	-6.31	-7.00	-7.83	-9.42	-11.07	-12.74	- 7/4 N
2	-4.24	-5.76	-6.50	-7.38	-9.05	-10.75	-12.47	- (7/4 N - 2/N)
3	-3.54	-5.20	-6.00	-6.93	-8.68	-10.43	-12.19	- (7/4 N - 4/N)
4	-2.83	-4.65	-5.50	-6.48	-8.31	-10.12	-11.92	- (7/4 N - 6/N)
5	-0.71	-0.83	-0.87	-0.89	-0.93	- 0.95	- 0.96	- n/N
6	-1.41	-1.66	-1.73	-1.79	-1.86	- 1.90	- 1.92	- 2 n/N
7	-0.71	-0.83	-0.87	-0.89	-0.93	- 0.95	- 0.96	- n/N
8	0.50	0.75	0.87	1.00	1.25	1.50	1.75	1/4 n
9	0.50	0.75	0.87	1.00	1.25	1.50	1.75	1/4 n
10	1.00	1.50	1.73	2.00	2.50	3.00	3.50	1/2 n
11	1.50	2.25	2.60	3.00	3.75	4.50	5.25	3/4 n
12	3.50	5.25	6.06	7.00	8.75	10.50	12.25	7/4 n
13	3.00	4.50	5.20	6.00	7.50	9.00	10.50	3/2 n
14	2.00	3.00	3.46	4.00	5.00	6.00	7.00	n
15	0	0	0	0	0	0	0	0
LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
1, 2, 3, 4	0.353553	0.450694	0.500000	0.559017	0.673146	0.790569	0.910014	1/8 N
5, 7	0.353553	0.300463	0.288684	0.279509	0.269258	0.263523	0.260004	1/4 N/n
6	0.707107	0.600925	0.577367	0.559017	0.538516	0.527046	0.520008	1/2 N/n
8, 9, 10, 11, 12, 13	0.500000	0.541667	0.577367	0.625000	0.725000	0.833333	0.946429	1/8 N^2/n
14	0.000000	0.416667	0.577250	0.750000	1.050000	1.333333	1.607150	1/4 (n - 4/n)
15	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
1-12, 2-8, 3-9, 4-11	45	34	30	27	22	18	16	2/n = tan a
5-8, 5-12, 6-8, 6-9, 6-10, 6-13, 7-9, 7-11	45	56	60	63	68	72	74	90 - a
8-13, 9-10, 10-14	90	68	60	54	44	36	32	2a
11-15	0	22	30	36	46	54	58	90 - 2a
1-5, 2-5, 3-7, 4-7, 14-15	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR FAN

10 PANELS AT TOP



To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

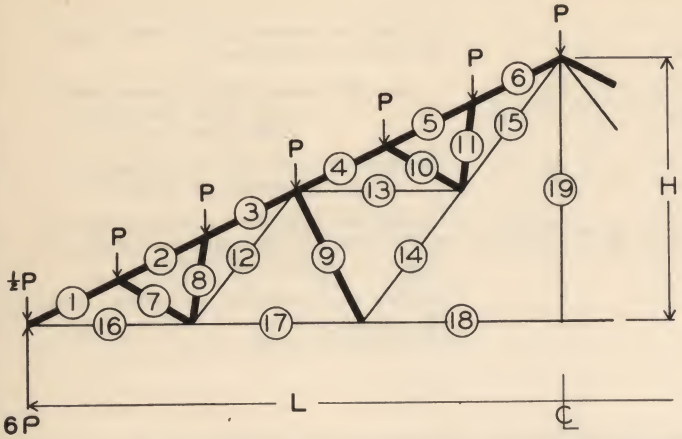
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n							GENERAL FORMULAS
	2	3	$2\sqrt{3}$	4	5	6	7	
STRESS COEFFICIENTS								
	P	P	P	P	P	P	P	P
1	-6.36	-8.11	-9.00	-10.06	-12.12	-14.23	-16.38	- 9/4 N
2	-5.66	-7.55	-8.50	- 9.62	-11.75	-13.91	-16.11	$-1/4\ (9n^2/N + 28)$
3	-4.37	-6.00	-6.80	- 7.74	- 9.52	-11.31	-13.14	$-1/20\ (37n^2/N + 100)$
4	-4.24	-6.44	-7.50	- 8.72	-11.00	-13.28	-15.56	$-3/4\ (3n^2/N + 4)$
5	-3.54	-5.89	-7.00	- 8.27	-10.63	-12.97	-15.28	$-1/4\ (9n^2/N + 4)$
6	-0.71	-0.85	-0.87	- 0.89	- 0.93	- 0.95	- 0.96	- n/N
7	-1.08	-1.31	-1.38	- 1.44	- 1.56	- 1.66	- 1.76	$-3/20\ n/N\sqrt{n^2+100}$
8	-1.08	-1.31	-1.38	- 1.44	- 1.56	- 1.66	- 1.76	$-3/20\ n/N\sqrt{n^2+100}$
9	-0.71	-0.85	-0.87	- 0.89	- 0.93	- 0.95	- 0.96	- n/N
10	0.50	0.75	0.87	1.00	1.25	1.50	1.75	1/4 n
11	0.50	0.75	0.87	1.00	1.25	1.50	1.75	1/4 n
12	1.50	2.25	2.60	3.00	3.75	4.50	5.25	3/4 n
13	2.00	3.00	3.46	4.00	5.00	6.00	7.00	n
14	4.50	6.75	7.79	9.00	11.25	13.50	15.75	9/4 n
15	4.00	6.00	6.92	8.00	10.00	12.00	14.00	2n
16	2.50	3.75	4.34	5.00	6.25	7.50	8.75	5/4 n
17	0	0	0	0	0	0	0	0
LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
1, 2, 3, 4, 5	0.282843	0.360555	0.400000	0.447214	0.538516	0.632456	0.728011	1/10 N
6, 9	0.282843	0.240370	0.230947	0.223607	0.215407	0.210819	0.208003	1/5 N/n
7, 8	0.721110	0.627384	0.611028	0.602080	0.602080	0.614636	0.634750	$1/20\ N/n\sqrt{n^2+100}$
10, 11, 13, 14	0.400000	0.433333	0.461894	0.500000	0.580000	0.666667	0.757143	$1/10\ N^2/n$
12, 15	0.600000	0.650000	0.692841	0.750000	0.870000	1.000000	1.135715	$3/20\ N^2/n$
16	0.000000	0.416667	0.575000	0.750000	1.050000	1.333333	1.607150	1/4 (n - 4/n)
17	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
1-14, 2-10, 4-11, 5-13	45	34	30	27	22	18	16	2/n = tan a
3- 7, 3- 8	79	73	71	68	63	59	55	10/n = tan b
6-10, 6-14, 9-11, 9-13	45	56	60	63	68	72	74	90 - a
10-15, 11-12, 12-16	90	68	60	54	44	36	32	2a
7-15, 8-12	34	39	41	41	41	41	39	b - a
7-10, 8-11	56	73	79	85	95	103	109	180 - a - b
13-17	0	22	30	36	46	54	58	90 - 2a
7-8	22	34	38	44	54	62	70	180 - 2b
1-6, 2-6, 4-9, 5- 9, 16-17	90	90	90	90	90	90	90	90

TRUSSES – STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES – TRIANGULAR FAN

12 PANELS AT TOP



To find the stress in any member when the truss is loaded at:

1. TOP – multiply the panel point load P by the stress coefficient under P

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

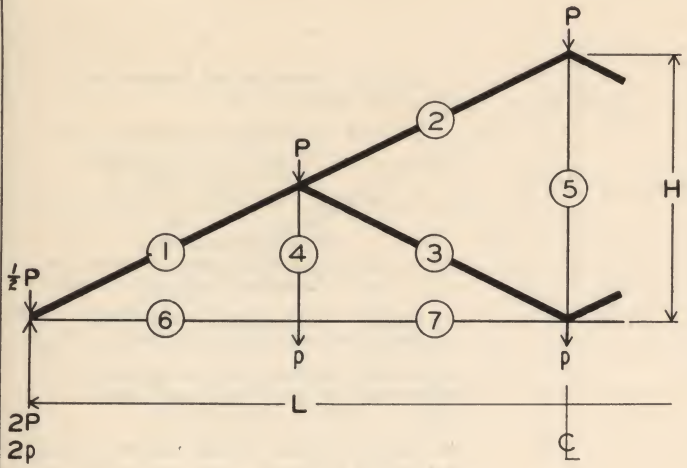
Compressive members are designated by heavy lines on the sketch and minus sign (–) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n							GENERAL FORMULAS
	2	3	$2\sqrt{3}$	4	5	6	7	
STRESS COEFFICIENTS								
	P	P	P	P	P	P	P	P
1	-7.78	-9.92	-11.00	-12.30	-14.81	-17.39	-20.02	$-11/4\ N$
2	-6.84	-8.94	-10.00	-11.25	-13.66	-16.13	-18.62	$-1/12\ (31N^2/N - 16)$
3	-6.36	-8.81	-10.00	-11.40	-14.07	-16.76	-19.47	$-1/12\ (33N^2/N - 48)$
4	-5.66	-8.25	-9.50	-10.96	-13.70	-16.44	-19.20	$-1/12\ (33N^2/N - 72)$
5	-4.71	-7.28	-8.50	-9.91	-12.55	-15.18	-17.80	$-1/12\ (31N^2/N - 88)$
6	-4.24	-7.14	-8.50	-10.06	-12.95	-15.93	-18.65	$-1/12\ (33N^2/N - 120)$
7	-0.75	-0.93	-1.00	-1.07	-1.21	-1.34	-1.48	$-1/6\ n/N\sqrt{n^2+36}$
8	-0.75	-0.93	-1.00	-1.07	-1.21	-1.34	-1.48	$-1/6\ n/N\sqrt{n^2+36}$
9	-2.12	-2.50	-2.60	-2.68	-2.79	-2.85	-2.88	$-3\ n/N$
10	-0.75	-0.93	-1.00	-1.07	-1.21	-1.34	-1.48	$-1/6\ n/N\sqrt{n^2+36}$
11	-0.75	-0.93	-1.00	-1.07	-1.21	-1.34	-1.48	$-1/6\ n/N\sqrt{n^2+36}$
12	1.00	1.50	1.73	2.00	2.50	3.00	3.50	$1/2\ n$
13	1.00	1.50	1.73	2.00	2.50	3.00	3.50	$1/2\ n$
14	1.50	2.25	2.60	3.00	3.75	4.50	5.25	$3/4\ n$
15	2.50	3.75	4.33	5.00	6.25	7.50	8.75	$5/4\ n$
16	5.50	8.25	9.53	11.00	13.75	16.50	19.25	$11/4\ n$
17	4.50	6.75	7.79	9.00	11.25	13.50	15.75	$9/4\ n$
18	3.00	4.50	5.20	6.00	7.50	9.00	10.50	$3/2\ n$
19	0	0	0	0	0	0	0	0
LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
1, 2, 3, 4, 5, 6	0.235702	0.300463	0.333333	0.372678	0.448764	0.527046	0.606676	$1/12\ N$
7, 8, 10, 11	0.372678	0.335927	0.333343	0.335927	0.350496	0.372678	0.399520	$1/24\ N\frac{\sqrt{n^2+36}}{n}$
9	0.707107	0.600925	0.577367	0.559017	0.538516	0.527046	0.520008	$1/2\ N/n$
12, 13, 14, 15, 16, 17	0.500000	0.541667	0.577367	0.625000	0.725000	0.833333	0.946429	$1/8\ N^2/n$
18	0.000000	0.416667	0.577250	0.750000	1.050000	1.333333	1.607150	$1/4\ (n - 4/n)$
19	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
1-16, 3-12, 4-13, 6-15	45	34	30	27	22	18	16	$2/n = \tan a$
2-7, 2-8, 5-10, 5-11	72	63	60	56	50	45	41	$6/n = \tan b$
12-17, 13-14, 14-18	90	68	60	54	44	36	32	$2a$
9-12, 9-13, 9-14, 9-17	45	56	60	63	68	72	74	$90 - a$
15-19	0	22	30	36	46	54	58	$90 - 2a$
7-16, 8-12, 10-13, 11-15	27	29	30	29	28	27	25	$b - a$
1-7, 3-8, 4-10, 6-11	108	117	120	124	130	135	139	$180 - b$
7-8, 10-11	36	54	60	68	80	90	98	$180 - 2b$
18-19	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR HOWE

4 PANELS AT TOP & BOTTOM



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

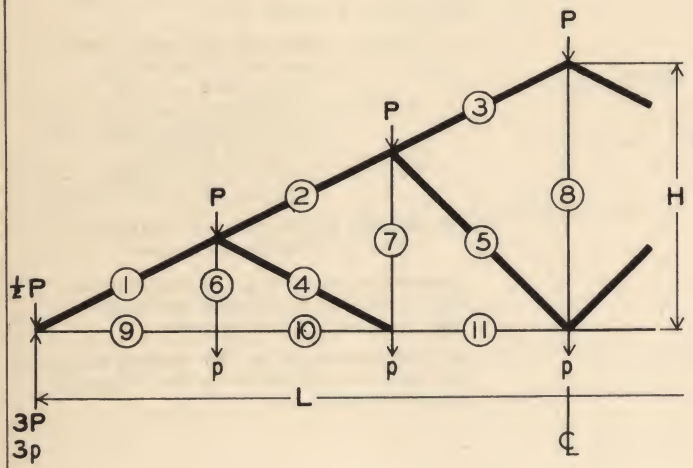
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	2		3		$2\sqrt{3}$		4		5		6		7			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.12	-2.12	-2.70	-2.70	-3.00	-3.00	-3.35	-3.35	-4.04	-4.04	-4.74	-4.74	-5.46	-5.46	- 3/4 N	- 3/4 N
2	-1.41	-1.41	-1.80	-1.80	-2.00	-2.00	-2.24	-2.24	-2.69	-2.69	-3.16	-3.16	-3.64	-3.64	- 1/2 N	- 1/2 N
3	-0.71	-0.71	-0.90	-0.90	-1.00	-1.00	-1.12	-1.12	-1.35	-1.35	-1.58	-1.58	-1.82	-1.82	- 1/4 N	- 1/4 N
4	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
5	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1	2
6	1.50	1.50	2.25	2.25	2.60	2.60	3.00	3.00	3.75	3.75	4.50	4.50	5.25	5.25	3/4 n	3/4 n
7	1.50	1.50	2.25	2.25	2.60	2.60	3.00	3.00	3.75	3.75	4.50	4.50	5.25	5.25	3/4 n	3/4 n
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3	0.707107		0.901388		1.000000		1.118034		1.346291		1.581139		1.820027		1/4 N	
4	0.500000		0.500000		0.500000		0.500000		0.500000		0.500000		0.500000		1/2	
5	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
6, 7	0.500000		0.750000		0.866000		1.000000		1.250000		1.500000		1.750000		1/4 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
1-6, 3-7	45		34		30		27		22		18		16		$2/n = \tan a$	
1-4, 2-5, 3-4, 3-5	45		56		60		63		68		72		74		90 - a	
2-3	90		68		60		54		44		36		32		2a	
4-6, 4-7	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR HOWE

6 PANELS AT TOP & BOTTOM



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

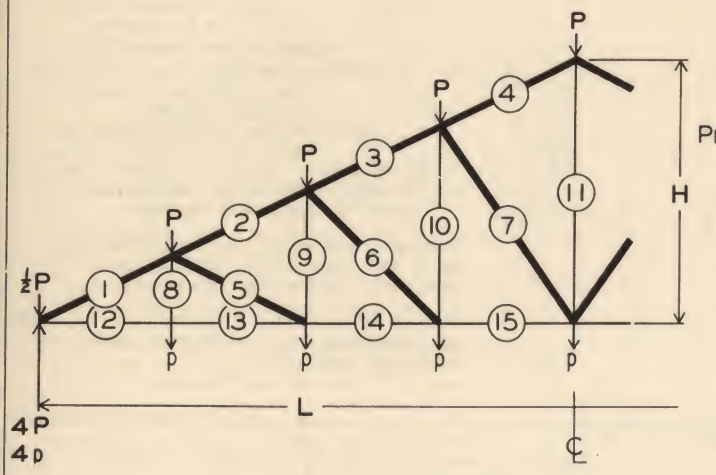
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	2		3		$2\sqrt{3}$		4		5		6		7			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-3.54	-3.54	-4.51	-4.51	-5.00	-5.00	-5.59	-5.59	-6.73	-6.73	-7.91	-7.91	-9.10	-9.10	- 5/4 N	- 5/4 N
2	-2.83	-2.83	-3.61	-3.61	-4.00	-4.00	-4.47	-4.47	-5.39	-5.39	-6.32	-6.32	-7.28	-7.28	- N	- N
3	-2.12	-2.12	-2.70	-2.70	-3.00	-3.00	-3.35	-3.35	-4.04	-4.04	-4.74	-4.74	-5.46	-5.46	- 3/4 N	- 3/4 N
4	-0.71	-0.71	-0.90	-0.90	-1.00	-1.00	-1.12	-1.12	-1.35	-1.35	-1.58	-1.58	-1.82	-1.82	- 1/4 N	- 1/4 N
5	-1.12	-1.12	-1.25	-1.25	-1.32	-1.32	-1.41	-1.41	-1.60	-1.60	-1.80	-1.80	-2.02	-2.02	$-1/4\sqrt{n^2+16}$	$-1/4\sqrt{n^2+16}$
6	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
7	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	1/2	3/2
8	2.00	3.00	2.00	3.00	2.00	3.00	2.00	3.00	2.00	3.00	2.00	3.00	2.00	3.00	2	3
9	2.50	2.50	3.75	3.75	4.33	4.33	5.00	5.00	6.25	6.25	7.50	7.50	8.75	8.75	5/4 n	5/4 n
10	2.50	2.50	3.75	3.75	4.33	4.33	5.00	5.00	6.25	6.25	7.50	7.50	8.75	8.75	5/4 n	5/4 n
11	2.00	2.00	3.00	3.00	3.46	3.46	4.00	4.00	5.00	5.00	6.00	6.00	7.00	7.00	n	n
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3, 4	0.471405		0.600925		0.666667		0.745356		0.897527		1.054093		1.213352		1/6 N	
5	0.745356		0.833333		0.881917		0.942809		1.067187		1.201850		1.343710		$1/6\sqrt{n^2+16}$	
6	0.333333		0.333333		0.333333		0.333333		0.333333		0.333333		0.333333		1/3	
7	0.666667		0.666667		0.666667		0.666667		0.666667		0.666667		0.666667		2/3	
8	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
9, 10, 11	0.333333		0.500000		0.577350		0.666667		0.833333		1.000000		1.166667		1/6 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
1-9, 4-10	45		34		30		27		22		18		16		2/n = tan a	
5-11	63		53		49		45		39		34		30		4/n = tan b	
1-6, 2-7, 3-8, 4-6, 4-7	45		56		60		63		68		72		74		90 - a	
5-7, 5-8	27		37		41		45		51		56		60		90 - b	
2- 4	90		68		60		54		44		36		32		2e	
3- 5	108		87		79		72		61		52		46		a + b	
6-9, 6-10, 7-11	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR HOWE

8 PANELS AT TOP & BOTTOM



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

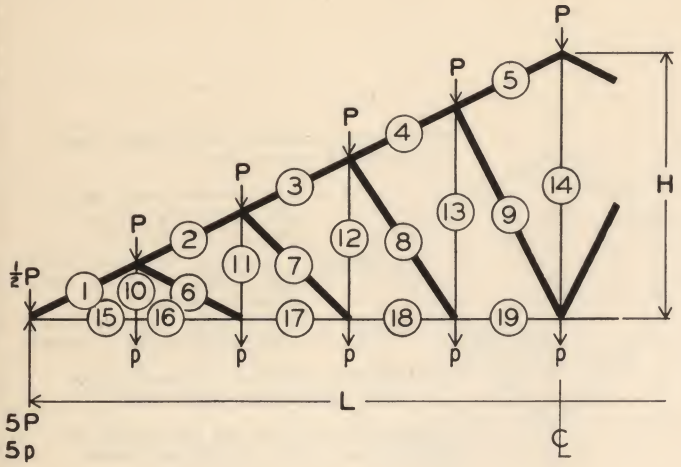
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	2		3		$2\sqrt{3}$		4		5		6		7			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-4.95	-4.95	-6.31	-6.31	-7.00	-7.00	-7.83	-7.83	-9.42	-9.42	-11.07	-11.07	-12.74	-12.74	- 7/4 N	- 7/4 N
2	-4.24	-4.24	-5.41	-5.41	-6.00	-6.00	-6.71	-6.71	-8.08	-8.08	- 9.49	- 9.49	-10.92	-10.92	- 3/2 N	- 3/2 N
3	-3.54	-3.54	-4.51	-4.51	-5.00	-5.00	-5.59	-5.59	-6.73	-6.73	- 7.91	- 7.91	- 9.10	- 9.10	- 5/4 N	- 5/4 N
4	-2.83	-2.83	-3.61	-3.61	-4.00	-4.00	-4.47	-4.47	-5.39	-5.39	- 6.32	- 6.32	- 7.28	- 7.28	- N	- N
5	-0.71	-0.71	-0.90	-0.90	-1.00	-1.00	-1.12	-1.12	-1.35	-1.35	- 1.58	- 1.58	- 1.82	- 1.82	- 1/4 N	- 1/4 N
6	-1.12	-1.12	-1.25	-1.25	-1.32	-1.32	-1.41	-1.41	-1.60	-1.60	- 1.80	- 1.80	- 2.02	- 2.02	$-1/4\sqrt{n^2+16}$	$-1/4\sqrt{n^2+16}$
7	-1.58	-1.58	-1.68	-1.68	-1.73	-1.73	-1.80	-1.80	-1.95	-1.95	- 2.12	- 2.12	- 2.30	- 2.30	$-1/4\sqrt{n^2+36}$	$-1/4\sqrt{n^2+36}$
8	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
9	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	1/2	3/2
10	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1	2
11	3.00	4.00	3.00	4.00	3.00	4.00	3.00	4.00	3.00	4.00	3.00	4.00	3.00	4.00	3	4
12	3.50	3.50	5.25	5.25	6.06	6.06	7.00	7.00	8.75	8.75	10.50	10.50	12.25	12.25	7/4 n	7/4 n
13	3.50	3.50	5.25	5.25	6.06	6.06	7.00	7.00	8.75	8.75	10.50	10.50	12.25	12.25	7/4 n	7/4 n
14	3.00	3.00	4.50	4.50	5.20	5.20	6.00	6.00	7.50	7.50	9.00	9.00	10.50	10.50	3/2 n	3/2 n
15	2.50	2.50	3.75	3.75	4.33	4.33	5.00	5.00	6.25	6.25	7.50	7.50	8.75	8.75	5/4 n	5/4 n
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3, 4, 5	0.353553		0.450694		0.500000		0.559017		0.673146		0.790569		0.910014		1/8 N	
6	0.559017		0.625000		0.661438		0.707107		0.800391		0.901388		1.007782		$1/8\sqrt{n^2+16}$	
7	0.790569		0.838525		0.866025		0.901388		0.976281		1.060660		1.152443		$1/8\sqrt{n^2+36}$	
8	0.250000		0.250000		0.250000		0.250000		0.250000		0.250000		0.250000		1/4	
9	0.500000		0.500000		0.500000		0.500000		0.500000		0.500000		.0.500000		1/2	
10	0.750000		0.750000		0.750000		0.750000		0.750000		0.750000		0.750000		3/4	
11	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
12, 13, 14, 15	0.250000		0.375000		0.433000		0.500000		0.625000		0.750000		0.875000		1/8 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
1-12, 5-13	45		34		30		27		22		18		16		2/n = tan a	
6-14	63		53		49		45		39		34		30		4/n = tan b	
7-15	72		63		60		56		50		45		41		6/n = tan c	
1- 8, 2-9, 3-10, 4-11, 5-8, 5- 9	45		56		60		63		68		72		74		90 - a	
6- 9, 6-10	27		37		41		45		51		56		60		90 - b	
7-10, 7-11	18		27		30		34		40		45		49		90 - c	
2-5	90		68		60		54		44		36		32		2a	
3-6	108		87		79		72		61		52		46		a + b	
4-7	117		97		90		83		72		63		57		a + c	
8-12, 8-13, 9-14, 10-15	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR HOWE

10 PANELS AT TOP & BOTTOM



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. **TOP** - multiply the panel point load **P** by the stress coefficient under **P**
2. **BOTTOM** - multiply the panel point load **p** by the stress coefficient under **p**
3. **TOP & BOTTOM** - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

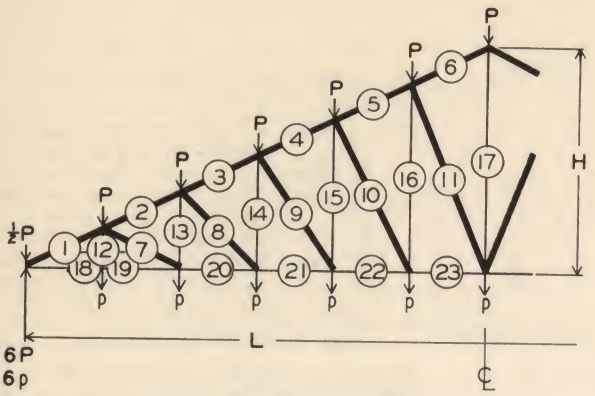
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	2		3		$2\sqrt{3}$		4		5		6		7			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-6.36	-6.36	-8.11	-8.11	-9.00	-9.00	-10.06	-10.06	-12.12	-12.12	-14.23	-14.23	-16.38	-16.38	- 9/4 N	- 9/4 N
2	-5.66	-5.66	-7.21	-7.21	-8.00	-8.00	- 8.94	- 8.94	-10.77	-10.77	-12.65	-12.65	-14.56	-14.56	- 2 N	- 2 N
3	-4.95	-4.95	-6.31	-6.31	-7.00	-7.00	- 7.83	- 7.83	- 9.42	- 9.42	-11.07	-11.07	-12.74	-12.74	- 7/4 N	- 7/4 N
4	-4.24	-4.24	-5.41	-5.41	-6.00	-6.00	- 6.71	- 6.71	- 8.08	- 8.08	- 9.49	- 9.49	-10.92	-10.92	- 3/2 N	- 3/2 N
5	-3.54	-3.54	-4.51	-4.51	-5.00	-5.00	- 5.59	- 5.59	- 6.73	- 6.73	- 7.91	- 7.91	- 9.10	- 9.10	- 5/4 N	- 5/4 N
6	-0.71	-0.71	-0.90	-0.90	-1.00	-1.00	- 1.12	- 1.12	- 1.35	- 1.35	- 1.58	- 1.58	- 1.82	- 1.82	- 1/4 N	- 1/4 N
7	-1.12	-1.12	-1.25	-1.25	-1.32	-1.32	- 1.41	- 1.41	- 1.60	- 1.60	- 1.80	- 1.80	- 2.02	- 2.02	$-1/4\sqrt{n^2+16}$	$-1/4\sqrt{n^2+16}$
8	-1.58	-1.58	-1.68	-1.68	-1.73	-1.73	- 1.80	- 1.80	- 1.95	- 1.95	- 2.12	- 2.12	- 2.30	- 2.30	$-1/4\sqrt{n^2+36}$	$-1/4\sqrt{n^2+36}$
9	-2.06	-2.06	-2.14	-2.14	-2.18	-2.18	- 2.24	- 2.24	- 2.36	- 2.36	- 2.50	- 2.50	- 2.66	- 2.66	$-1/4\sqrt{n^2+64}$	$-1/4\sqrt{n^2+64}$
10	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
11	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	1/2	3/2
12	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1	2
13	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	3/2	5/2
14	4.00	5.00	4.00	5.00	4.00	5.00	4.00	5.00	4.00	5.00	4.00	5.00	4.00	5.00	4	5
15	4.50	4.50	6.75	6.75	7.79	7.79	9.00	9.00	11.25	11.25	13.50	13.50	15.75	15.75	9/4 n	9/4 n
16	4.50	4.50	6.75	6.75	7.79	7.79	9.00	9.00	11.25	11.25	13.50	13.50	15.75	15.75	9/4 n	9/4 n
17	4.00	4.00	6.00	6.00	6.93	6.93	8.00	8.00	10.00	10.00	12.00	12.00	14.00	14.00	2 n	2 n
18	3.50	3.50	5.25	5.25	6.06	6.06	7.00	7.00	8.75	8.75	10.50	10.50	12.25	12.25	7/4 n	7/4 n
19	3.00	3.00	4.50	4.50	5.20	5.20	6.00	6.00	7.50	7.50	9.00	9.00	10.50	10.50	3/2 n	3/2 n
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3, 4, 5, 6	0.282843		0.360555		0.400000		0.447214		0.538516		0.632456		0.728011		$1/10\ N$	
7	0.447214		0.500000		0.529150		0.565685		0.640312		0.721110		0.806226		$1/10\sqrt{n^2+16}$	
8	0.632456		0.670820		0.692820		0.721110		0.781025		0.848528		0.921954		$1/10\sqrt{n^2+36}$	
9	0.824621		0.854400		0.871780		0.894427		0.943398		1.000000		1.063015		$1/10\sqrt{n^2+64}$	
10	0.200000		0.200000		0.200000		0.200000		0.200000		0.200000		0.200000		1/5	
11	0.400000		0.400000		0.400000		0.400000		0.400000		0.400000		0.400000		2/5	
12	0.600000		0.600000		0.600000		0.600000		0.600000		0.600000		0.600000		3/5	
13	0.800000		0.800000		0.800000		0.800000		0.800000		0.800000		0.800000		4/5	
14	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
15, 16, 17, 18, 19	0.200000		0.300000		0.346400		0.400000		0.500000		0.600000		0.700000		1/10 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
1-15, 6-16	45		34		30		27		22		18		16		$2/n = \tan a$	
7-17	63		53		49		45		39		34		30		$4/n = \tan b$	
8-18	72		63		60		56		50		45		41		$6/n = \tan c$	
9-19	76		69		67		63		58		53		49		$8/n = \tan d$	
1-10, 2-11, 3-12, 4-13, 5-14, 6-10, 6-11	45		56		60		63		68		72		74		90 - a	
7-11, 7-12	27		37		41		45		51		56		60		90 - b	
8-12, 8-13	18		27		30		34		40		45		49		90 - c	
9-13, 9-14	14		21		23		27		32		37		41		90 - d	
2-6	90		68		60		54		44		36		32		2a	
3-7	108		87		79		72		61		52		46		a + b	
4-8	117		97		90		83		72		63		57		a + c	
5-9	121		103		97		90		80		71		65		a + d	
10-15, 10-16, 11-17, 12-18, 13-19	90		90		90		90		90		90		90		90	

TRUSSES-STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES-TRIANGULAR HOWE

12 PANELS AT TOP & BOTTOM



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

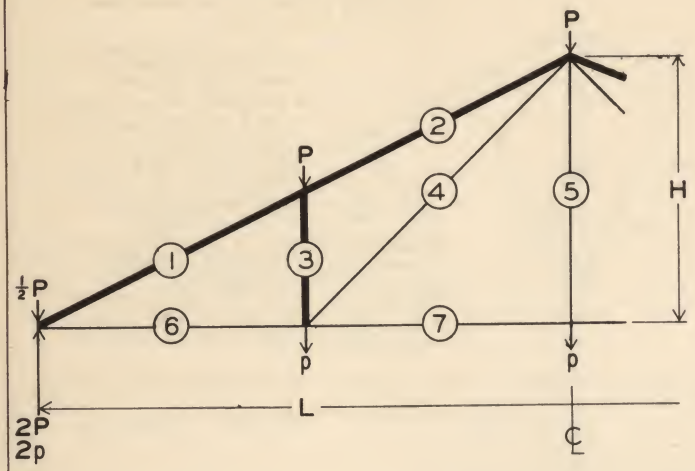
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n							GENERAL FORMULAS	
	2	3	$2\sqrt{3}$	4	5	6	7		
STRESS COEFFICIENTS									
	P p	P p	P p	P p	P p	P p	P p	P	P
1	-7.78 -7.78	-9.92 -9.92	-11.00 -11.00	-12.30 -12.30	-14.81 -14.81	-17.39 -17.39	-20.02 -20.02	- 11/4 N	- 11/4 N
2	-7.07 -7.07	-9.01 -9.01	-10.00 -10.00	-11.18 -11.18	-13.46 -13.46	-15.81 -15.81	-18.20 -18.20	- 5/2 N	- 5/2 N
3	-6.36 -6.36	-8.11 -8.11	- 9.00 - 9.00	-10.06 -10.06	-12.12 -12.12	-14.23 -14.23	-16.38 -16.38	- 9/4 N	- 9/4 N
4	-5.66 -5.66	-7.21 -7.21	- 8.00 - 8.00	- 8.94 - 8.94	-10.77 -10.77	-12.65 -12.65	-14.56 -14.56	- 2 N	- 2 N
5	-4.95 -4.95	-6.31 -6.31	- 7.00 - 7.00	- 7.83 - 7.83	- 9.42 - 9.42	-11.07 -11.07	-12.74 -12.74	- 7/4 N	- 7/4 N
6	-4.24 -4.24	-5.41 -5.41	- 6.00 - 6.00	- 6.71 - 6.71	- 8.08 - 8.08	- 9.49 - 9.49	-10.92 -10.92	- 3/2 N	- 3/2 N
7	-0.71 -0.71	-0.90 -0.90	- 1.00 - 1.00	- 1.12 - 1.12	- 1.35 - 1.35	- 1.58 - 1.58	- 1.82 - 1.82	- 1/4 N	- 1/4 N
8	-1.12 -1.12	-1.25 -1.25	- 1.32 - 1.32	- 1.41 - 1.41	- 1.60 - 1.60	- 1.80 - 1.80	- 2.02 - 2.02	- 1/4 $\sqrt{n^2+16}$	- 1/4 $\sqrt{n^2+16}$
9	-1.58 -1.58	-1.68 -1.68	- 1.73 - 1.73	- 1.80 - 1.80	- 1.95 - 1.95	- 2.12 - 2.12	- 2.30 - 2.30	- 1/4 $\sqrt{n^2+36}$	- 1/4 $\sqrt{n^2+36}$
10	-2.06 -2.06	-2.14 -2.14	- 2.18 - 2.18	- 2.24 - 2.24	- 2.36 - 2.36	- 2.50 - 2.50	- 2.66 - 2.66	- 1/4 $\sqrt{n^2+64}$	- 1/4 $\sqrt{n^2+}$
11	-2.55 -2.55	-2.61 -2.61	- 2.65 - 2.65	- 2.69 - 2.69	- 2.80 - 2.80	- 2.92 - 2.92	- 3.05 - 3.05	- 1/4 $\sqrt{n^2+100}$	- 1/4 $\sqrt{n^2+100}$
12	0 1.00	0 1.00	0 1.00	0 1.00	0 1.00	0 1.00	0 1.00	0	1
13	0.50 1.50	0.50 1.50	0.50 1.50	0.50 1.50	0.50 1.50	0.50 1.50	0.50 1.50	1/2	3/2
14	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1	2
15	1.50 2.50	1.50 2.50	1.50 2.50	1.50 2.50	1.50 2.50	1.50 2.50	1.50 2.50	3/2	5/2
16	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00	2	3
17	5.00 6.00	5.00 6.00	5.00 6.00	5.00 6.00	5.00 6.00	5.00 6.00	5.00 6.00	5	6
18	5.50 5.50	8.25 8.25	9.53 9.53	11.00 11.00	13.75 13.75	16.50 16.50	19.25 19.25	11/4 n	11/4 n
19	5.50 5.50	8.25 8.25	9.53 9.53	11.00 11.00	13.75 13.75	16.50 16.50	19.25 19.25	11/4 n	11/4 n
20	5.00 5.00	7.50 7.50	8.66 8.66	10.00 10.00	12.50 12.50	15.00 15.00	17.50 17.50	5/2 n	5/2 n
21	4.50 4.50	6.75 6.75	7.79 7.79	9.00 9.00	11.25 11.25	13.50 13.50	15.75 15.75	9/4 n	9/4 n
22	4.00 4.00	6.00 6.00	6.93 6.93	8.00 8.00	10.00 10.00	12.00 12.00	14.00 14.00	2 n	2 n
23	3.50 3.50	5.25 5.25	6.06 6.06	7.00 7.00	8.75 8.75	10.50 10.50	12.25 12.25	7/4 n	7/4 n
LENGTH COEFFICIENTS									
	H	H	H	H	H	H	H	H	
1, 2, 3, 4, 5, 6, 7	0.235702	0.300463	0.333333	0.372678	0.448764	0.527046	0.606676	1/12 N	
8	0.372678	0.416667	0.440959	0.471405	0.533594	0.600925	0.671855	1/12 $\sqrt{n^2+16}$	
9	0.527046	0.559017	0.577350	0.600925	0.650854	0.707107	0.768295	1/12 $\sqrt{n^2+36}$	
10	0.687184	0.712000	0.726483	0.745356	0.786165	0.833333	0.885845	1/12 $\sqrt{n^2+64}$	
11	0.849837	0.870026	0.881917	0.897527	0.931695	0.971825	1.017213	1/12 $\sqrt{n^2+100}$	
12	0.166667	0.166667	0.166667	0.166667	0.166667	0.166667	0.166667	1/6	
13	0.333333	0.333333	0.333333	0.333333	0.333333	0.333333	0.333333	1/3	
14	0.500000	0.500000	0.500000	0.500000	0.500000	0.500000	0.500000	1/2	
15	0.666667	0.666667	0.666667	0.666667	0.666667	0.666667	0.666667	2/3	
16	0.833333	0.833333	0.833333	0.833333	0.833333	0.833333	0.833333	5/6	
17	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1	
18,19,20,21,22,23	0.166667	0.250000	0.288667	0.333333	0.416667	0.500000	0.583333	1/12 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS									
1-18, 7-19	45	34	30	27	22	18	16	2/n = tan a	
8-20	63	53	49	45	39	34	30	4/n = tan b	
9-21	72	63	60	56	50	45	41	6/n = tan c	
10-22	76	69	67	63	58	53	49	8/n = tan d	
11-23	79	73	71	68	63	59	55	10/n = tan e	
1-12, 2-13, 3-14, 4-15, 5-16, 6-17, 7-18	45	56	60	63	68	72	74	90 - a	
8-13, 8-14	27	37	41	45	51	56	60	90 - b	
9-14, 9-15	18	27	30	34	40	45	49	90 - c	
10-15, 10-16	14	21	23	27	32	37	41	90 - d	
11-16, 11-17	11	17	19	22	27	31	35	90 - e	
2- 7	90	68	60	54	44	36	32	2a	
3- 8	108	87	79	72	61	52	46	a + b	
4- 9	117	97	90	83	72	63	57	a + c	
5-10	121	103	97	90	80	71	65	a + d	
6-11	124	107	101	95	85	77	71	a + e	
12-18, 12-19, 13-20, 14-21, 14-22, 16-23	90	90	90	90	90	90	90	90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR PRATT

4 PANELS AT TOP & BOTTOM



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$$n = \frac{L}{H}$$

$$N = \sqrt{n^2+4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

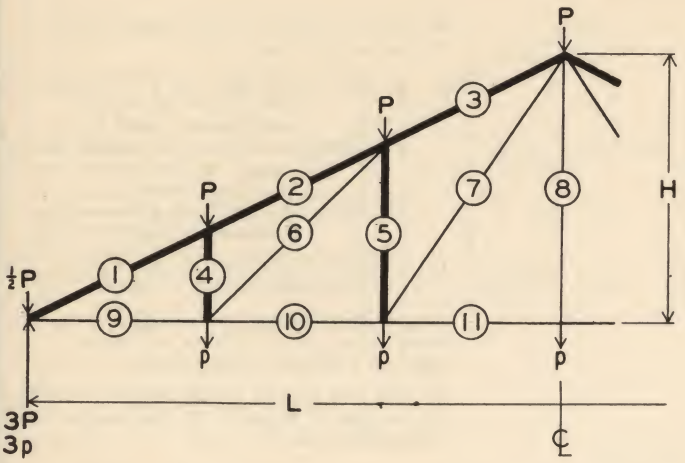
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	2		3		$2\sqrt{3}$		4		5		6		7			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.12	-2.12	-2.70	-2.70	-3.00	-3.00	-3.35	-3.35	-4.04	-4.04	-4.74	-4.74	-5.46	-5.46	- 3/4 N	- 3/4 N
2	-2.12	-2.12	-2.70	-2.70	-3.00	-3.00	-3.35	-3.35	-4.04	-4.04	-4.74	-4.74	-5.46	-5.46	- 3/4 N	- 3/4 N
3	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	- 1	0
4	1.12	1.12	1.25	1.25	1.32	1.32	1.41	1.41	1.60	1.60	1.80	1.80	2.02	2.02	$1/4\sqrt{n^2+16}$	$1/4\sqrt{n^2+16}$
5	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
6	1.50	1.50	2.25	2.25	2.60	2.60	3.00	3.00	3.75	3.75	4.50	4.50	5.25	5.25	3/4 n	3/4 n
7	1.00	1.00	1.50	1.50	1.73	1.73	2.00	2.00	2.50	2.50	3.00	3.00	3.50	3.50	1/2 n	1/2 n
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2	0.707107		0.901388		1.000000		1.118034		1.346291		1.581139		1.820027		1/4 N	
3	0.500000		0.500000		0.500000		0.500000		0.500000		0.500000		0.500000		1/2	
4	1.118034		1.250000		1.322876		1.414214		1.600781		1.802776		2.015564		$1/4\sqrt{n^2+16}$	
5	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
6, 7	0.500000		0.750000		0.866000		1.000000		1.250000		1.500000		1.750000		1/4 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
1-6	45		34		30		27		22		18		16		2/n = tan a	
4-7	63		53		49		45		39		34		30		4/n = tan b	
1-3	45		56		60		63		68		72		74		90 - a	
3-4, 4-5	27		37		41		45		51		56		60		90 - b	
2-4	18		19		19		18		17		16		14		b - a	
2-3	135		124		120		117		112		108		106		90 + a	
3-6, 5-7	90		90		90		90		90		90		90		90	

TRUSSES – STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES – TRIANGULAR PRATT

6 PANELS AT TOP & BOTTOM



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1. TOP – multiply the panel point load P by the stress coefficient under P
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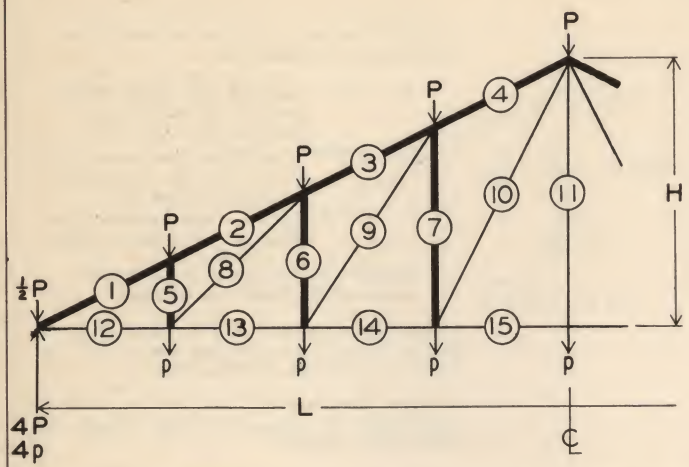
To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	2		3		$2\sqrt{3}$		4		5		6		7			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-3.54	-3.54	-4.61	-4.61	-5.00	-5.00	-5.59	-5.59	-6.73	-6.73	-7.91	-7.91	-9.10	-9.10	– 5/4 N	– 5/4 N
2	-3.54	-3.54	-4.61	-4.61	-5.00	-5.00	-5.59	-5.59	-6.73	-6.73	-7.91	-7.91	-9.10	-9.10	– 5/4 N	– 5/4 N
3	-2.83	-2.83	-3.61	-3.61	-4.00	-4.00	-4.47	-4.47	-5.39	-5.39	-6.32	-6.32	-7.28	-7.28	– N	– N
4	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	– 1	0
5	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	– 3/2	– 1/2
6	1.12	1.12	1.25	1.25	1.32	1.32	1.41	1.41	1.60	1.60	1.80	1.80	2.02	2.02	$1/4\sqrt{n^2+16}$	$1/4\sqrt{n^2+16}$
7	1.58	1.58	1.68	1.68	1.73	1.73	1.80	1.80	1.95	1.95	2.12	2.12	2.30	2.30	$1/4\sqrt{n^2+36}$	$1/4\sqrt{n^2+36}$
8	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
9	2.50	2.50	3.75	3.75	4.33	4.33	5.00	5.00	6.25	6.25	7.50	7.50	8.75	8.75	5/4 n	5/4 n
10	2.00	2.00	3.00	3.00	3.46	3.46	4.00	4.00	5.00	5.00	6.00	6.00	7.00	7.00	n	n
11	1.50	1.50	2.25	2.25	2.60	2.60	3.00	3.00	3.75	3.75	4.50	4.50	5.25	5.25	3/4 n	3/4 n
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3	0.471405		0.600925		0.666075		0.745356		0.897527		1.054093		1.213352		1/6 N	
4	0.333333		0.333333		0.333333		0.333333		0.333333		0.333333		0.333333		1/3	
5	0.666667		0.666667		0.666667		0.666667		0.666667		0.666667		0.666667		2/3	
6	0.745356		0.833333		0.881917		0.942809		1.067187		1.201850		1.343710		$1/6\sqrt{n^2+16}$	
7	1.054093		1.118034		1.154701		1.201850		1.301708		1.414214		1.536591		$1/6\sqrt{n^2+36}$	
8	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
9, 10, 11	0.333333		0.500000		0.577333		0.666667		0.833333		1.000000		1.166667		1/6 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
1– 9	45		34		30		27		22		18		16		2/n = tan a	
8–10	63		53		49		45		39		34		30		4/n = tan b	
7–11	72		63		60		56		50		45		41		6/n = tan c	
1– 4	45		56		60		63		68		72		74		90 – a	
4–6, 5–6	27		37		41		45		51		56		60		90 – b	
5–7, 7–8	18		27		30		34		40		45		49		90 – c	
2– 6	18		19		19		18		17		16		14		b – a	
3– 7	27		29		30		29		28		27		25		c – a	
2–4, 3–5	135		124		120		117		112		108		106		90 + a	
4–9, 5–10, 8–11	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR PRATT

8 PANELS AT TOP & BOTTOM



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$$n = \frac{L}{H}$$

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To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
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3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

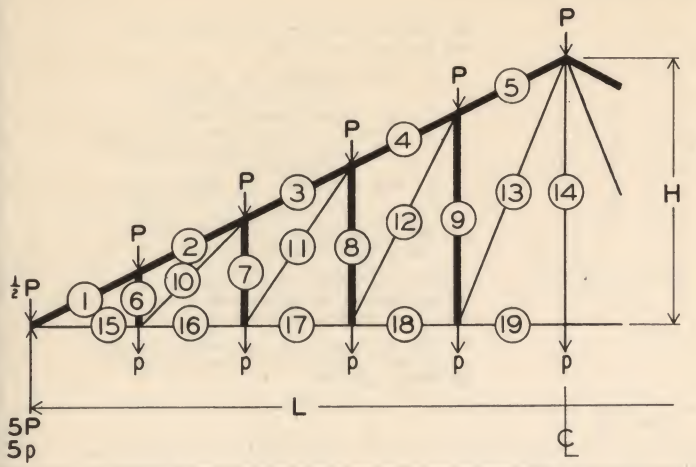
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	2		3		$2\sqrt{3}$		4		5		6		7			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-4.95	-4.95	-6.31	-6.31	-7.00	-7.00	-7.83	-7.83	-9.42	-9.42	-11.07	-11.07	-12.74	-12.74	- 7/4 N	- 7/4 N
2	-4.95	-4.95	-6.31	-6.31	-7.00	-7.00	-7.83	-7.83	-9.42	-9.42	-11.07	-11.07	-12.74	-12.74	- 7/4 N	- 7/4 N
3	-4.24	-4.24	-5.41	-5.41	-6.00	-6.00	-6.71	-6.71	-8.08	-8.08	- 9.49	- 9.49	-10.92	-10.92	- 3/2 N	- 3/2 N
4	-3.54	-3.54	-4.51	-4.51	-5.00	-5.00	-5.59	-5.59	-6.73	-6.73	- 7.91	- 7.91	- 9.10	- 9.10	- 5/4 N	- 5/4 N
5	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	- 1.00	0	- 1.00	0	- 1	0
6	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 3/2	- 1/2
7	-2.00	-1.00	-2.00	-1.00	-2.00	-1.00	-2.00	-1.00	-2.00	-1.00	- 2.00	- 1.00	- 2.00	- 1.00	- 2	- 1
8	1.12	1.12	1.25	1.25	1.32	1.32	1.41	1.41	1.60	1.60	1.80	1.80	2.02	2.02	$1/4\sqrt{n^2+16}$	$1/4\sqrt{n^2+16}$
9	1.58	1.58	1.68	1.68	1.73	1.73	1.80	1.80	1.95	1.95	2.12	2.12	2.30	2.30	$1/4\sqrt{n^2+36}$	$1/4\sqrt{n^2+36}$
10	2.06	2.06	2.14	2.14	2.18	2.18	2.24	2.24	2.36	2.36	2.50	2.50	2.66	2.66	$1/4\sqrt{n^2+64}$	$1/4\sqrt{n^2+64}$
11	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
12	3.50	3.50	5.25	5.25	6.06	6.06	7.00	7.00	8.75	8.75	10.50	10.50	12.25	12.25	7/4 n	7/4 n
13	3.00	3.00	4.50	4.50	5.20	5.20	6.00	6.00	7.50	7.50	9.00	9.00	10.50	10.50	3/2 n	3/2 n
14	2.50	2.50	3.75	3.75	4.33	4.33	5.00	5.00	6.25	6.25	7.50	7.50	8.75	8.75	5/4 n	5/4 n
15	2.00	2.00	3.00	3.00	3.46	3.46	4.00	4.00	5.00	5.00	6.00	6.00	7.00	7.00	n	n
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3, 4	0.353553		0.450694		0.500000		0.559017		0.673146		0.790569		0.910014		1/8 N	
5	0.250000		0.250000		0.250000		0.250000		0.250000		0.250000		0.250000		1/4	
6	0.500000		0.500000		0.500000		0.500000		0.500000		0.500000		0.500000		1/2	
7	0.750000		0.750000		0.750000		0.750000		0.750000		0.750000		0.750000		3/4	
8	0.559017		0.625000		0.661438		0.707107		0.800391		0.901388		1.007782		$1/8\sqrt{n^2+16}$	
9	0.790569		0.838525		0.866025		0.901388		0.976281		1.060660		1.152443		$1/8\sqrt{n^2+36}$	
10	1.030776		1.068000		1.089725		1.118034		1.179248		1.250000		1.328768		$1/8\sqrt{n^2+64}$	
11	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
12, 13, 14, 15	0.250000		0.375000		0.433000		0.500000		0.625000		0.750000		0.875000		1/8 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
1-12	45		34		30		27		22		18		16		2/n = tan a	
8-13	63		53		49		45		39		34		30		1/n = tan b	
9-14	72		63		60		56		50		45		41		1/n = tan c	
10-15	76		69		67		63		58		53		49		1/n = tan d	
1- 5	45		56		60		63		68		72		74		90 - a	
5- 8, 6- 8	27		37		41		45		51		56		60		90 - b	
6- 9, 7- 9	18		27		30		34		40		45		49		90 - c	
7-10, 10-11	14		21		23		27		32		37		41		90 - d	
2- 8	18		19		19		18		17		16		14		b - a	
3- 9	27		29		30		29		28		27		25		c - a	
4-10	31		35		37		36		36		35		33		d - a	
2-5, 3- 6, 4-7	135		124		120		117		112		108		106		90 + a	
5-12, 6-13, 7-14, 11-15	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR PRATT

10 PANELS AT TOP & BOTTOM



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

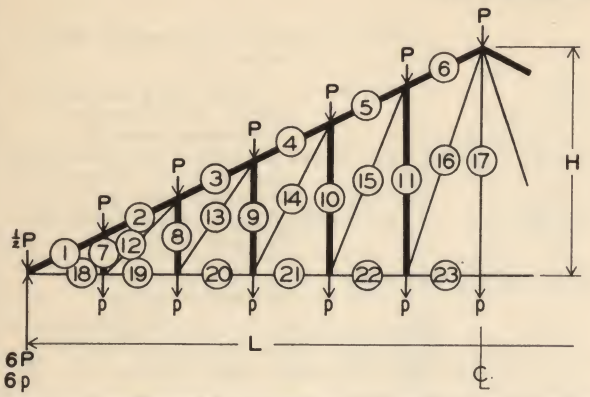
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	2		3		$2\sqrt{3}$		4		5		6		7			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-6.36	-6.36	-8.11	-8.11	-9.00	-9.00	-10.06	-10.06	-12.12	-12.12	-14.23	-14.23	-16.38	-16.38	- 9/4 N	- 9/4 N
2	-6.36	-6.36	-8.11	-8.11	-9.00	-9.00	-10.06	-10.06	-12.12	-12.12	-14.23	-14.23	-16.38	-16.38	- 9/4 N	- 9/4 N
3	-5.66	-5.66	-7.21	-7.21	-8.00	-8.00	- 8.94	- 8.94	-10.77	-10.77	-12.65	-12.65	-14.56	-14.56	- 2 N	- 2 N
4	-4.95	-4.95	-6.31	-6.31	-7.00	-7.00	- 7.83	- 7.83	- 9.42	- 9.42	-11.07	-11.07	-12.74	-12.74	- 7/4 N	- 7/4 N
5	-4.24	-4.24	-5.41	-5.41	-6.00	-6.00	- 6.71	- 6.71	- 8.08	- 8.08	- 9.49	- 9.49	-10.92	-10.92	- 3/2 N	- 3/2 N
6	-1.00	0	-1.00	0	-1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1	0
7	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 3/2	- 1/2
8	-2.00	-1.00	-2.00	-1.00	-2.00	-1.00	- 2.00	- 1.00	- 2.00	- 1.00	- 2.00	- 1.00	- 2.00	- 1.00	- 2	- 1
9	-2.50	-1.50	-2.50	-1.50	-2.50	-1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 5/2	- 3/2
10	1.12	1.12	1.25	1.25	1.32	1.32	1.41	1.41	1.60	1.60	1.80	1.80	2.02	2.02	$1/4\sqrt{n^2+16}$	$1/4\sqrt{n^2+16}$
11	1.58	1.58	1.68	1.68	1.73	1.73	1.80	1.80	1.95	1.95	2.12	2.12	2.30	2.30	$1/4\sqrt{n^2+36}$	$1/4\sqrt{n^2+36}$
12	2.06	2.06	2.14	2.14	2.18	2.18	2.24	2.24	2.36	2.36	2.50	2.50	2.66	2.66	$1/4\sqrt{n^2+64}$	$1/4\sqrt{n^2+64}$
13	2.55	2.55	2.61	2.61	2.65	2.65	2.69	2.69	2.80	2.80	2.92	2.92	3.05	3.05	$1/4\sqrt{n^2+100}$	$1/4\sqrt{n^2+100}$
14	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
15	4.50	4.50	6.75	6.75	7.79	7.79	9.00	9.00	11.25	11.25	13.50	13.50	15.75	15.75	9/4 n	9/4 n
16	4.00	4.00	6.00	6.00	6.93	6.93	8.00	8.00	10.00	10.00	12.00	12.00	14.00	14.00	2 n	2 n
17	3.50	3.50	5.25	5.25	6.06	6.06	7.00	7.00	8.75	8.75	10.50	10.50	12.25	12.25	7/4 n	7/4 n
18	3.00	3.00	4.50	4.50	5.20	5.20	6.00	6.00	7.50	7.50	9.00	9.00	10.50	10.50	3/2 n	3/2 n
19	2.50	2.50	3.75	3.75	4.33	4.33	5.00	5.00	6.25	6.25	7.50	7.50	8.75	8.75	5/4 n	5/4 n
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3, 4, 5	0.282843		0.360555		0.400000		0.447214		0.538516		0.632456		0.728011		1/10 N	
6	0.200000		0.200000		0.200000		0.200000		0.200000		0.200000		0.200000		1/5	
7	0.400000		0.400000		0.400000		0.400000		0.400000		0.400000		0.400000		2/5	
8	0.600000		0.600000		0.600000		0.600000		0.600000		0.600000		0.600000		3/5	
9	0.800000		0.800000		0.800000		0.800000		0.800000		0.800000		0.800000		4/5	
10	0.447214		0.500000		0.529150		0.565685		0.640312		0.721110		0.806226		$1/10\sqrt{n^2+16}$	
11	0.632456		0.670820		0.692820		0.721110		0.781025		0.848528		0.921954		$1/10\sqrt{n^2+36}$	
12	0.824621		0.854400		0.871780		0.894427		0.943398		1.000000		1.063015		$1/10\sqrt{n^2+64}$	
13	1.019804		1.044031		1.058301		1.077033		1.118034		1.166190		1.220656		$1/10\sqrt{n^2+100}$	
14	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
15, 16, 17, 18, 19	0.200000		0.300000		0.346400		0.400000		0.500000		0.600000		0.700000		1/10 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
1-15	45		34		30		27		22		18		16		2/n = tan a	
10-16	63		53		49		45		39		34		30		4/n = tan b	
11-17	72		63		60		56		50		45		41		6/n = tan c	
12-18	76		69		67		63		58		53		49		8/n = tan d	
13-19	79		73		71		68		64		59		55		10/n = tan e	
1- 6	45		56		60		63		68		72		74		90 - a	
6-10, 7-10	27		37		41		45		51		56		60		90 - b	
7-11, 8-11	18		27		30		34		40		45		49		90 - c	
8-12, 9-12	14		21		23		27		32		37		41		90 - d	
9-13, 13-14	11		17		19		22		26		31		35		90 - e	
2-10	18		19		19		18		17		16		14		b - a	
3-11	27		29		30		29		28		27		25		c - a	
4-12	31		35		37		36		36		35		33		d - a	
5-13	34		39		41		41		42		41		39		e - a	
2-6, 3-7, 4-8, 5-9	135		124		120		117		112		108		106		90 + a	
6-15, 7-16, 8-17, 9-18, 14-19	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - TRIANGULAR PRATT

12 PANELS AT TOP & BOTTOM



$$\text{PITCH} = \frac{H}{L} = \frac{1}{n}$$

$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 4}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

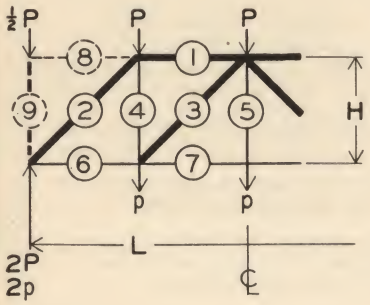
Compressive members are designated by heavy lines on the sketch and minus sign. (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n							GENERAL FORMULAS	
	2	3	$2\sqrt{3}$	4	5	6	7		
STRESS COEFFICIENTS									
	P p	P p	P p	P p	P p	P p	P p	P	p
1	-7.78 -7.78	-9.92 -9.92	-11.00 -11.00	-12.30 -12.30	-14.81 -14.81	-17.39 -17.39	-20.02 -20.02	- 11/4 N	- 11/4 N
2	-7.78 -7.78	-9.92 -9.92	-11.00 -11.00	-12.30 -12.30	-14.81 -14.81	-17.39 -17.39	-20.02 -20.02	- 11/4 N	- 11/4 N
3	-7.07 -7.07	-9.01 -9.01	-10.00 -10.00	-11.18 -11.18	-13.46 -13.46	-15.81 -15.81	-18.20 -18.20	- 5/2 N	- 5/2 N
4	-6.36 -6.36	-8.11 -8.11	- 9.00 - 9.00	-10.06 -10.06	-12.12 -12.12	-14.23 -14.23	-16.38 -16.38	- 9/4 N	- 9/4 N
5	-5.66 -5.66	-7.21 -7.21	- 8.00 - 8.00	- 8.94 - 8.94	-10.77 -10.77	-12.65 -12.65	-14.56 -14.56	- 2 N	- 2 N
6	-4.95 -4.95	-6.31 -6.31	- 7.00 - 7.00	- 7.83 - 7.83	- 9.42 - 9.42	-11.07 -11.07	-12.74 -12.74	- 7/4 N	- 7/4 N
7	-1.00 0	-1.00 0	- 1.00 0	- 1.00 0	- 1.00 0	- 1.00 0	- 1.00 0	- 1	0
8	-1.50 -0.50	-1.50 -0.50	- 1.50 - 0.50	- 1.50 - 0.50	- 1.50 - 0.50	- 1.50 - 0.50	- 1.50 - 0.50	- 3/2	- 1/2
9	-2.00 -1.00	-2.00 -1.00	- 2.00 - 1.00	- 2.00 - 1.00	- 2.00 - 1.00	- 2.00 - 1.00	- 2.00 - 1.00	- 2	- 1
10	-2.50 -1.50	-2.50 -1.50	- 2.50 - 1.50	- 2.50 - 1.50	- 2.50 - 1.50	- 2.50 - 1.50	- 2.50 - 1.50	- 5/2	- 3/2
11	-3.00 -2.00	-3.00 -2.00	- 3.00 - 2.00	- 3.00 - 2.00	- 3.00 - 2.00	- 3.00 - 2.00	- 3.00 - 2.00	- 3	- 2
12	1.12 1.12	1.25 1.25	1.32 1.32	1.41 1.41	1.60 1.60	1.80 1.80	2.02 2.02	$1/4\sqrt{n^2+16}$	$1/4\sqrt{n^2+16}$
13	1.68 1.68	1.68 1.68	1.73 1.73	1.80 1.80	1.95 1.95	2.12 2.12	2.30 2.30	$1/4\sqrt{n^2+36}$	$1/4\sqrt{n^2+36}$
14	2.06 2.06	2.14 2.14	2.18 2.18	2.24 2.24	2.36 2.36	2.50 2.50	2.66 2.66	$1/4\sqrt{n^2+64}$	$1/4\sqrt{n^2+64}$
15	2.55 2.55	2.61 2.61	2.65 2.65	2.69 2.69	2.80 2.80	2.92 2.92	3.05 3.05	$1/4\sqrt{n^2+100}$	$1/4\sqrt{n^2+100}$
16	3.04 3.04	3.09 3.09	3.12 3.12	3.16 3.16	3.25 3.25	3.35 3.35	3.47 3.47	$1/4\sqrt{n^2+144}$	$1/4\sqrt{n^2+144}$
17	0 1.00	0 1.00	0 1.00	0 1.00	0 1.00	0 1.00	0 1.00	0	1
18	5.50 5.50	8.25 8.25	9.52 9.52	11.00 11.00	13.75 13.75	16.50 16.50	19.25 19.25	11/4 n	11/4 n
19	5.00 5.00	7.50 7.50	8.66 8.66	10.00 10.00	12.50 12.50	15.00 15.00	17.50 17.50	5/2 n	5/2 n
20	4.50 4.50	6.75 6.75	7.79 7.79	9.00 9.00	11.25 11.25	13.50 13.50	15.75 15.75	9/4 n	9/4 n
21	4.00 4.00	6.00 6.00	6.93 6.93	8.00 8.00	10.00 10.00	12.00 12.00	14.00 14.00	2 n	2 n
22	3.50 3.50	5.25 5.25	6.06 6.06	7.00 7.00	8.75 8.75	10.50 10.50	12.25 12.25	7/4 n	7/4 n
23	3.00 3.00	4.50 4.50	5.20 5.20	6.00 6.00	7.50 7.50	9.00 9.00	10.50 10.50	3/2 n	3/2 n
LENGTH COEFFICIENTS									
	H	H	H	H	H	H	H	H	
1, 2, 3, 4, 5, 6	0.235702	0.300463	0.333333	0.372678	0.448764	0.527046	0.606676	1/12 N	
7	0.166667	0.166667	0.166667	0.166667	0.166667	0.166667	0.166667	1/6	
8	0.333333	0.333333	0.333333	0.333333	0.333333	0.333333	0.333333	1/3	
9	0.500000	0.500000	0.500000	0.500000	0.500000	0.500000	0.500000	1/2	
10	0.666667	0.666667	0.666667	0.666667	0.666667	0.666667	0.666667	2/3	
11	0.833333	0.833333	0.833333	0.833333	0.833333	0.833333	0.833333	5/6	
12	0.372678	0.416667	0.440959	0.471405	0.533594	0.600925	0.671855	$1/12\sqrt{n^2+16}$	
13	0.527046	0.559017	0.577350	0.600925	0.650854	0.707107	0.768295	$1/12\sqrt{n^2+36}$	
14	0.687184	0.712000	0.726483	0.745356	0.786165	0.833333	0.885845	$1/12\sqrt{n^2+64}$	
15	0.849837	0.870026	0.881917	0.897527	0.931695	0.971825	1.017213	$1/12\sqrt{n^2+100}$	
16	1.013794	1.030776	1.040833	1.054093	1.083333	1.118034	1.157704	$1/12\sqrt{n^2+144}$	
17	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1	
18,19,20,21,22,23	0.166667	0.250000	0.288667	0.333333	0.416 667	0.50 0000	0.583333	1/12 n	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS									
1-18, 2-12	45	34	30	27	22	18	16	2/n = tan a	
12-19	63	53	49	45	39	34	30	4/n = tan b	
13-20	72	63	60	56	50	45	41	6/n = tan c	
14-21	76	69	67	63	58	53	49	8/n = tan d	
15-22	79	73	71	68	63	59	55	10/n = tan e	
16-23	80	76	74	72	67	63	60	12/n = tan f	
1- 7	45	56	60	63	68	72	74	90 - a	
7-12, 8-12	27	37	41	45	51	56	60	90 - b	
8-13, 9-13	18	27	30	34	40	45	49	90 - c	
9-14, 10-14	14	21	23	27	32	37	41	90 - d	
10-15, 11-15	11	17	19	22	27	31	35	90 - e	
11-16, 16-17	10	14	16	18	23	27	30	90 - f	
2-12	18	19	19	18	17	16	14	b - a	
3-13	27	29	30	29	28	27	25	c - a	
4-14	31	35	37	36	36	35	33	d - a	
5-15	34	39	41	41	41	41	39	e - a	
6-16	35	42	44	45	45	45	44	f - a	
2-7, 3-8, 4-9, 5-10, 6-11	135	124	120	117	112	108	106	90 + a	
7-18, 8-19, 9-20, 10-21, 11-22, 17-25	90	90	90	90	90	90	90	90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT HOWE

4 PANELS AT TOP & BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 16}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

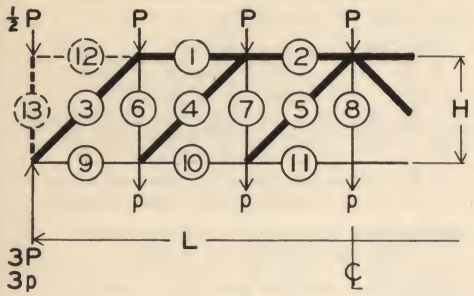
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.63	-2.63	-3.00	-3.00	-3.38	-3.38	-3.75	-3.75	-4.13	-4.13	-4.50	-4.50	-4.88	-4.88	- 3/8 n	- 3/8 n
2	-3.02	-3.02	-3.35	-3.35	-3.69	-3.69	-4.04	-4.04	-4.39	-4.39	-4.74	-4.74	-5.10	-5.10	- 3/8 N	- 3/8 N
3	-1.01	-1.01	-1.12	-1.12	-1.23	-1.23	-1.35	-1.35	-1.46	-1.46	-1.58	-1.58	-1.70	-1.70	- 1/8 N	- 1/8 N
4	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	1/2	3/2
5	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
6	2.63	2.63	3.00	3.00	3.38	3.38	3.75	3.75	4.13	4.13	4.50	4.50	4.88	4.88	3/8 n	3/8 n
7	3.50	3.50	4.00	4.00	4.50	4.50	5.00	5.00	5.50	5.50	6.00	6.00	6.50	6.50	1/2 n	1/2 n
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	- 1/2	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
Horizontal	1.750000		2.000000		2.250000		2.500000		2.750000		3.000000		3.250000		1/4 n	
Diagonal	2.015564		2.236068		2.462214		2.692582		2.926175		3.162278		3.400368		1/4 N	
Vertical	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between diagonal and horizontal members	30		27		24		22		20		18		17		4/n = tan a	
Between diagonal and vertical members	60		63		66		68		70		72		73		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT HOWE

6 PANELS AT TOP & BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2+36}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

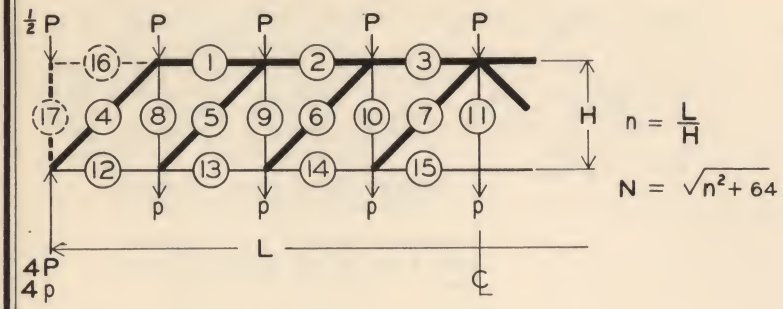
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.92	-2.92	-3.33	-3.33	-3.75	-3.75	-4.17	-4.17	-4.58	-4.58	-5.00	-5.00	-5.42	-5.42	- 5/12 n	- 5/12 n
2	-4.67	-4.67	-5.33	-5.33	-6.00	-6.00	-6.67	-6.67	-7.33	-7.33	-8.00	-8.00	-8.67	-8.67	- 2/3 n	- 2/3 n
3	-3.84	-3.84	-4.17	-4.17	-4.51	-4.51	-4.86	-4.86	-5.22	-5.22	-5.59	-5.59	-5.97	-5.97	- 5/12 N	- 5/12 N
4	-2.30	-2.30	-2.50	-2.50	-2.70	-2.70	-2.92	-2.92	-3.13	-3.13	-3.35	-3.35	-3.58	-3.58	- 1/4 N	- 1/4 N
5	-0.77	-0.77	-0.83	-0.83	-0.90	-0.90	-0.97	-0.97	-1.04	-1.04	-1.12	-1.12	-1.19	-1.19	- 1/12 N	- 1/12 N
6	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	3/2	5/2
7	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	1/2	3/2
8	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
9	2.92	2.92	3.33	3.33	3.75	3.75	4.17	4.17	4.58	4.58	5.00	5.00	5.42	5.42	5/12 n	5/12 n
10	4.67	4.67	5.33	5.33	6.00	6.00	6.67	6.67	7.33	7.33	8.00	8.00	8.67	8.67	2/3 n	2/3 n
11	5.25	5.25	6.00	6.00	6.75	6.75	7.50	7.50	8.25	8.25	9.00	9.00	9.75	9.75	3/4 n	3/4 n
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	- 1/2	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
Horizontal	1.166667		1.333333		1.500000		1.666667		1.833333		2.000000		2.166667		1/6 n	
Diagonal	1.536591		1.666667		1.802776		1.943651		2.088327		2.236068		2.386304		1/6 N	
Vertical	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between diagonal and horizontal members	41		37		34		31		29		27		25		6/n = tan a	
Between diagonal and vertical members	49		53		56		59		61		63		65		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT HOWE

8 PANELS AT TOP & BOTTOM



To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

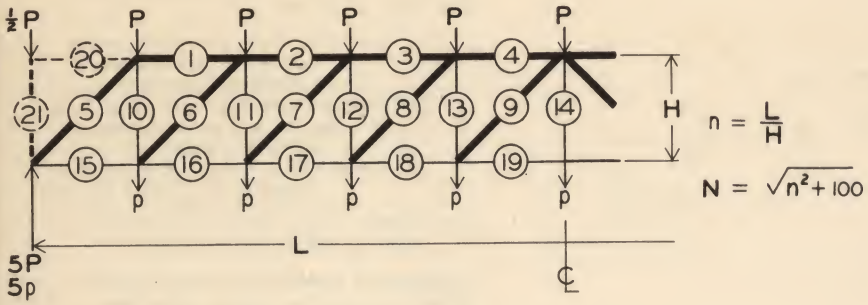
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-3.06	-3.06	-3.50	-3.50	-3.94	-3.94	-4.38	-4.38	- 4.81	- 4.81	- 5.25	- 5.25	- 5.69	- 5.69	- 7/16 n	- 7/16 n
2	-5.25	-5.25	-6.00	-6.00	-6.75	-6.75	-7.50	-7.50	- 8.25	- 8.25	- 9.00	- 9.00	- 9.75	- 9.75	- 3/4 n	- 3/4 n
3	-6.56	-6.56	-7.50	-7.50	-8.44	-8.44	-9.38	-9.38	-10.31	-10.31	-11.25	-11.25	-12.19	-12.19	- 15/16 n	- 15/16 n
4	-4.65	-4.65	-4.95	-4.95	-5.27	-5.27	-5.60	-5.60	- 5.95	- 5.95	- 6.31	- 6.31	- 6.68	- 6.68	- 7/16 N	- 7/16 N
5	-3.32	-3.32	-3.54	-3.54	-3.76	-3.76	-4.00	-4.00	- 4.25	- 4.25	- 4.51	- 4.51	- 4.77	- 4.77	- 5/16 N	- 5/16 N
6	-1.99	-1.99	-2.12	-2.12	-2.26	-2.26	-2.40	-2.40	- 2.55	- 2.55	- 2.70	- 2.70	- 2.86	- 2.86	- 3/16 N	- 3/16 N
7	-0.66	-0.66	-0.71	-0.71	-0.75	-0.75	-0.80	-0.80	- 0.85	- 0.85	- 0.90	- 0.90	- 0.95	- 0.95	- 1/16 N	- 1/16 N
8	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	5/2	7/2
9	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	3/2	5/2
10	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	1/2	3/2
11	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
12	3.06	3.06	3.50	3.50	3.94	3.94	4.38	4.38	4.81	4.81	5.25	5.25	5.69	5.69	7/16 n	7/16 n
13	5.25	5.25	6.00	6.00	6.75	6.75	7.50	7.50	8.25	8.25	9.00	9.00	9.75	9.75	3/4 n	3/4 n
14	6.56	6.56	7.50	7.50	8.44	8.44	9.38	9.38	10.31	10.31	11.25	11.25	12.19	12.19	15/16 n	15/16 n
15	7.00	7.00	8.00	8.00	9.00	9.00	10.00	10.00	11.00	11.00	12.00	12.00	13.00	13.00	n	n
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-0.50	0	-0.50	0	-0.50	0	-0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 1/2	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
Horizontal	0.875000		1.000000		1.125000		1.250000		1.375000		1.500000		1.625000		1/8 n	
Diagonal	1.328768		1.414214		1.505199		1.600781		1.700184		1.802776		1.908042		1/8 N	
Vertical	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between diagonal and horizontal members	49		45		42		39		36		34		32		8/n = tan a	
Between diagonal and vertical members	41		45		48		51		54		56		58		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT HOWE

10 PANELS AT TOP & BOTTOM



$n = \frac{L}{H}$

$N = \sqrt{n^2 + 100}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

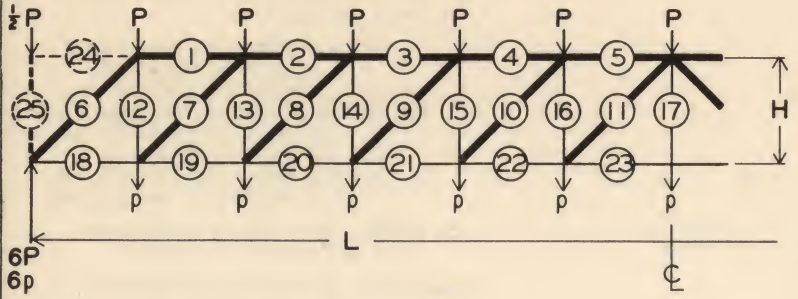
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-3.15	-3.15	-3.60	-3.60	- 4.05	- 4.05	- 4.50	- 4.50	- 4.95	- 4.95	- 5.40	- 5.40	- 5.85	- 5.85	- 9/20 n	- 9/20 n
2	-5.60	-5.60	-6.40	-6.40	- 7.20	- 7.20	- 8.00	- 8.00	- 8.80	- 8.80	- 9.60	- 9.60	-10.40	-10.40	- 4/5 n	- 4/5 n
3	-7.35	-7.35	-8.40	-8.40	- 9.45	- 9.45	-10.50	-10.50	-11.55	-11.55	-12.60	-12.60	-13.65	-13.65	- 21/20 n	- 21/20 n
4	-8.40	-8.40	-9.60	-9.60	-10.80	-10.80	-12.00	-12.00	-13.20	-13.20	-14.40	-14.40	-15.60	-15.60	- 6/5 n	- 6/5 n
5	-5.49	-5.49	-5.76	-5.76	- 6.05	- 6.05	- 6.36	- 6.36	- 6.69	- 6.69	- 7.03	- 7.03	- 7.38	- 7.38	- 9/20 N	- 9/20 N
6	-4.27	-4.27	-4.48	-4.48	- 4.71	- 4.71	- 4.96	- 4.96	- 5.20	- 5.20	- 5.47	- 5.47	- 5.74	- 5.74	- 7/20 N	- 7/20 N
7	-3.05	-3.05	-3.20	-3.20	- 3.36	- 3.36	- 3.54	- 3.54	- 3.72	- 3.72	- 3.91	- 3.91	- 4.10	- 4.10	- 1/4 N	- 1/4 N
8	-1.83	-1.83	-1.92	-1.92	- 2.02	- 2.02	- 2.12	- 2.12	- 2.23	- 2.23	- 2.34	- 2.34	- 2.46	- 2.46	- 3/20 N	- 3/20 N
9	-0.61	-0.61	-0.64	-0.64	- 0.67	- 0.67	- 0.71	- 0.71	- 0.74	- 0.74	- 0.78	- 0.78	- 0.82	- 0.82	- 1/20 N	- 1/20 N
10	3.50	4.50	3.50	4.50	3.50	4.50	3.50	4.50	3.50	4.50	3.50	4.50	3.50	4.50	7/2	9/2
11	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	5/2	7/2
12	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	3/2	5/2
13	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	1/2	3/2
14	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
15	3.15	3.15	3.60	3.60	4.05	4.05	4.50	4.50	4.95	4.95	5.40	5.40	5.85	5.85	9/20 n	9/20 n
16	5.60	5.60	6.40	6.40	7.20	7.20	8.00	8.00	8.80	8.80	9.60	9.60	10.40	10.40	4/5 n	4/5 n
17	7.35	7.35	8.40	8.40	9.45	9.45	10.50	10.50	11.55	11.55	12.60	12.60	13.65	13.65	21/20 n	21/20 n
18	8.40	8.40	9.60	9.60	10.80	10.80	12.00	12.00	13.20	13.20	14.40	14.40	15.60	15.60	6/5 n	6/5 n
19	8.75	8.75	10.00	10.00	11.25	11.25	12.50	12.50	13.75	13.75	15.00	15.00	16.25	16.25	5/4 n	5/4 n
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	-0.50	0	-0.50	0	-0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 1/2	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
Horizontal	0.700000		0.800000		0.900000		1.000000		1.100000		1.200000		1.300000		1/10 n	
Diagonal	1.220656		1.280625		1.345362		1.414214		1.486607		1.562050		1.640122		1/10 N	
Vertical	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between diagonal and horizontal members	55		51		48		45		42		40		38		10/n = tan a	
Between diagonal and vertical members	35		39		42		45		48		50		52		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT HOWE

12 PANELS AT TOP & BOTTOM



$n = \frac{L}{H}$ $N = \sqrt{n^2+144}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

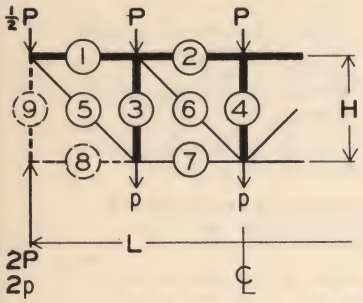
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	- 3.21	- 3.21	- 3.67	- 3.67	- 4.13	- 4.13	- 4.58	- 4.58	- 5.04	- 5.04	- 5.50	- 5.50	- 5.96	- 5.96	- 11/24 n	- 11/24 n
2	- 5.83	- 5.83	- 6.67	- 6.67	- 7.50	- 7.50	- 8.33	- 8.33	- 9.17	- 9.17	-10.00	-10.00	-10.83	-10.83	- 5/6 n	- 5/6 n
3	- 7.88	- 7.88	- 9.00	- 9.00	-10.13	-10.13	-11.25	-11.25	-12.38	-12.38	-13.50	-13.50	-14.63	-14.63	- 9/8 n	- 9/8 n
4	- 9.33	- 9.33	-10.67	-10.67	-12.00	-12.00	-13.33	-13.33	-14.67	-14.67	-16.00	-16.00	-17.33	-17.33	- 4/3 n	- 4/3 n
5	-10.21	-10.21	-11.67	-11.67	-13.13	-13.13	-14.58	-14.58	-16.04	-16.04	-17.50	-17.50	-18.96	-18.96	- 35/24 n	- 35/24 n
6	- 6.37	- 6.37	- 6.61	- 6.61	- 6.88	- 6.88	- 7.16	- 7.16	- 7.46	- 7.46	- 7.78	- 7.78	- 8.11	- 8.11	- 11/24 N	- 11/24 N
7	- 5.21	- 5.21	- 5.41	- 5.41	- 5.63	- 5.63	- 5.86	- 5.86	- 6.10	- 6.10	- 6.36	- 6.36	- 6.63	- 6.63	- 3/8 N	- 3/8 N
8	- 4.05	- 4.05	- 4.21	- 4.21	- 4.38	- 4.38	- 4.56	- 4.56	- 4.75	- 4.75	- 4.95	- 4.95	- 5.16	- 5.16	- 7/24 N	- 7/24 N
9	- 2.89	- 2.89	- 3.00	- 3.00	- 3.13	- 3.13	- 3.25	- 3.25	- 3.39	- 3.39	- 3.54	- 3.54	- 3.69	- 3.69	- 5/24 N	- 5/24 N
10	- 1.74	- 1.74	- 1.80	- 1.80	- 1.88	- 1.88	- 1.95	- 1.95	- 2.03	- 2.03	- 2.12	- 2.12	- 2.21	- 2.21	- 1/8 N	- 1/8 N
11	- 0.58	- 0.58	- 0.60	- 0.60	- 0.63	- 0.63	- 0.65	- 0.65	- 0.68	- 0.68	- 0.71	- 0.71	- 0.74	- 0.74	- 1/24 N	- 1/24 N
12	4.50	5.50	4.50	5.50	4.50	5.50	4.50	5.50	4.50	5.50	4.50	5.50	4.50	5.50	9/2	11/2
13	3.50	4.50	3.50	4.50	3.50	4.50	3.50	4.50	3.50	4.50	3.50	4.50	3.50	4.50	7/2	9/2
14	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	2.50	3.50	5/2	7/2
15	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	1.50	2.50	3/2	5/2
16	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	0.50	1.50	1/2	3/2
17	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
18	3.21	3.21	3.67	3.67	4.13	4.13	4.58	4.58	5.04	5.04	5.50	5.50	5.96	5.96	11/24 n	11/24 n
19	5.83	5.83	6.67	6.67	7.50	7.50	8.33	8.33	9.17	9.17	10.00	10.00	10.83	10.83	5/6 n	5/6 n
20	7.88	7.88	9.00	9.00	10.13	10.13	11.25	11.25	12.38	12.38	13.50	13.50	14.63	14.63	9/8 n	9/8 n
21	9.33	9.33	10.67	10.67	12.00	12.00	13.33	13.33	14.67	14.67	16.00	16.00	17.33	17.33	4/3 n	4/3 n
22	10.21	10.21	11.67	11.67	13.13	13.13	14.58	14.58	16.04	16.04	17.50	17.50	18.96	18.96	35/24 n	35/24 n
23	10.50	10.50	12.00	12.00	13.50	13.50	15.00	15.00	16.50	16.50	18.00	18.00	19.50	19.50	3/2 n	3/2 n
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 1/2	0

LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
Horizontal	0.583333	0.666667	0.750000	0.833333	0.916667	1.000000	1.083333	1/12 n
Diagonal	1.157704	1.201850	1.250000	1.301708	1.356568	1.414214	1.474317	1/12 N
Vertical	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between diagonal and horizontal members	60	56	53	50	47	45	43	12/n = tan a
Between diagonal and vertical members	30	34	37	40	43	45	47	90 - a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT PRATT

4 PANELS AT TOP & BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 16}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

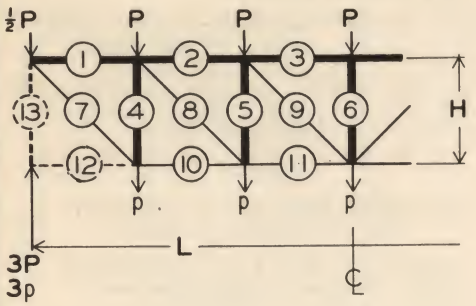
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.63	-2.63	-3.00	-3.00	-3.38	-3.38	-3.75	-3.75	-4.13	-4.13	-4.50	-4.50	-4.88	-4.88	- 3/8 n	- 3/8 n
2	-3.50	-3.50	-4.00	-4.00	-4.50	-4.50	-5.00	-5.00	-5.50	-5.50	-6.00	-6.00	-6.50	-6.50	- 1/2 n	- 1/2 n
3	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	- 3/2	- 1/2
4	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	- 1	0
5	3.02	3.02	3.35	3.35	3.69	3.69	4.04	4.04	4.39	4.39	4.74	4.74	5.10	5.10	3/8 N	3/8 N
6	1.01	1.01	1.12	1.12	1.23	1.23	1.35	1.35	1.46	1.46	1.58	1.58	1.70	1.70	1/8 N	1/8 N
7	2.63	2.63	3.00	3.00	3.38	3.38	3.75	3.75	4.13	4.13	4.50	4.50	4.88	4.88	3/8 n	3/8 n
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	-2.00	0	-2.00	0	-2.00	0	-2.00	0	-2.00	0	-2.00	0	-2.00	0	- 2	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
Horizontal	1.750000		2.000000		2.250000		2.500000		2.750000		3.000000		3.250000		1/4 n	
Diagonal	2.015564		2.236068		2.462214		2.692582		2.926175		3.162278		3.400368		1/4 N	
Vertical	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	30		27		24		22		20		18		17		4/n = tan a	
Between diagonal and vertical members	60		63		66		68		70		72		73		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT PRATT

6 PANELS AT TOP & BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2+36}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

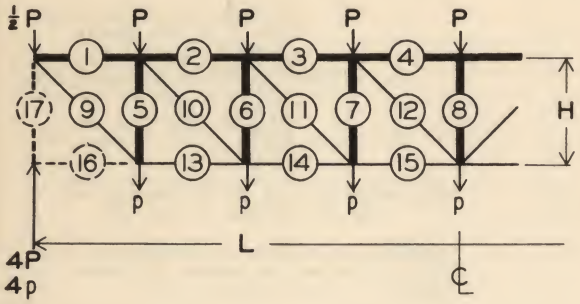
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.92	-2.92	-3.33	-3.33	-3.75	-3.75	-4.17	-4.17	-4.58	-4.58	-5.00	-5.00	-5.42	-5.42	- 5/12 n	- 5/12 n
2	-4.67	-4.67	-5.33	-5.33	-6.00	-6.00	-6.67	-6.67	-7.33	-7.33	-8.00	-8.00	-8.67	-8.67	- 8/12 n	- 8/12 n
3	-5.25	-5.25	-6.00	-6.00	-6.75	-6.75	-7.50	-7.50	-8.25	-8.25	-9.00	-9.00	-9.75	-9.75	- 9/12 n	- 9/12 n
4	-2.50	-1.50	-2.50	-1.50	-2.50	-1.50	-2.50	-1.50	-2.50	-1.50	-2.50	-1.50	-2.50	-1.50	- 5/2	- 3/2
5	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	- 3/2	- 1/2
6	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	- 1	0
7	3.84	3.84	4.17	4.17	4.51	4.51	4.86	4.86	5.22	5.22	5.59	5.59	5.97	5.97	5/12 N	5/12 N
8	2.30	2.30	2.50	2.50	2.70	2.70	2.92	2.92	3.13	3.13	3.35	3.35	3.58	3.58	3/12 N	3/12 N
9	0.77	0.77	0.83	0.83	0.90	0.90	0.97	0.97	1.04	1.04	1.12	1.12	1.19	1.19	1/12 N	1/12 N
10	2.92	2.92	3.33	3.33	3.75	3.75	4.17	4.17	4.58	4.58	5.00	5.00	5.42	5.42	5/12 n	5/12 n
11	4.67	4.67	5.33	5.33	6.00	6.00	6.67	6.67	7.33	7.33	8.00	8.00	8.67	8.67	8/12 n	8/12 n
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	-3.00	0	-3.00	0	-3.00	0	-3.00	0	-3.00	0	-3.00	0	-3.00	0	- 3	0

LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
Horizontal	1.166667	1.333333	1.500000	1.666667	1.833333	2.000000	2.166667	1/6 n
Diagonal	1.536591	1.666667	1.802776	1.943651	2.088327	2.236068	2.386304	1/6 N
Vertical	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between horizontal and diagonal members	41	37	34	31	29	27	25	6/n = tan a
Between diagonal and vertical members	49	53	56	59	61	63	65	90 - a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT PRATT

8 PANELS AT TOP & BOTTOM



$n = \frac{L}{H}$

$N = \sqrt{n^2+64}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

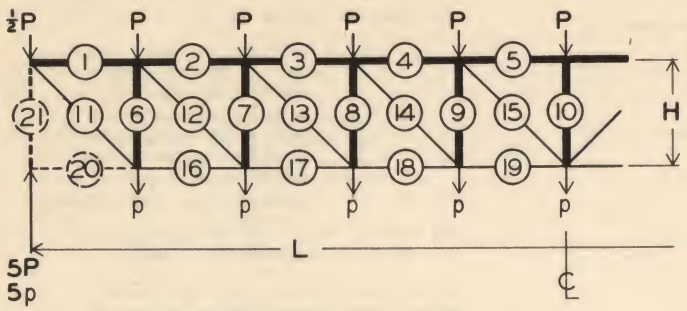
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n							GENERAL FORMULAS	
	7	8	9	10	11	12	13		
STRESS COEFFICIENTS									
	P p	P p	P p	P p	P p	P p	P p	P	p
1	-3.06 -3.06	-3.50 -3.50	-3.94 -3.94	- 4.38 - 4.38	- 4.81 - 4.81	- 5.25 - 5.25	- 5.69 - 5.69	- 7/16 n	- 7/16 n
2	-5.25 -5.25	-6.00 -6.00	-6.75 -6.75	- 7.50 - 7.50	- 8.25 - 8.25	- 9.00 - 9.00	- 9.75 - 9.75	- 12/16 n	- 12/16 n
3	-6.56 -6.56	-7.50 -7.50	-8.44 -8.44	- 9.38 - 9.38	-10.31 -10.31	-11.25 -11.25	-12.19 -12.19	- 15/16 n	- 15/16 n
4	-7.00 -7.00	-8.00 -8.00	-9.00 -9.00	-10.00 -10.00	-11.00 -11.00	-12.00 -12.00	-13.00 -13.00	- n	- n
5	-3.50 -2.50	-3.50 -2.50	-3.50 -2.50	- 3.50 - 2.50	- 3.50 - 2.50	- 3.50 - 2.50	- 3.50 - 2.50	- 7/2	- 5/2
6	-2.50 -1.50	-2.50 -1.50	-2.50 -1.50	- 2.50 - 1.50	- 2.50 - 1.50	- 2.50 - 1.50	- 2.50 - 1.50	- 5/2	- 3/2
7	-1.50 -0.50	-1.50 -0.50	-1.50 -0.50	- 1.50 - 0.50	- 1.50 - 0.50	- 1.50 - 0.50	- 1.50 - 0.50	- 3/2	- 1/2
8	-1.00 0	-1.00 0	-1.00 0	- 1.00 0	- 1.00 0	- 1.00 0	- 1.00 0	- 1	0
9	4.65 4.65	4.95 4.95	5.27 5.27	5.60 5.60	5.95 5.95	6.31 6.31	6.68 6.68	7/16 N	7/16 N
10	3.32 3.32	3.54 3.54	3.76 3.76	4.00 4.00	4.25 4.25	4.51 4.51	4.77 4.77	5/16 N	5/16 N
11	1.99 1.99	2.12 2.12	2.26 2.26	2.40 2.40	2.55 2.55	2.70 2.70	2.86 2.86	3/16 N	3/16 N
12	0.66 0.66	0.71 0.71	0.75 0.75	0.80 0.80	0.85 0.85	0.90 0.90	0.95 0.95	1/16 N	1/16 N
13	3.06 3.06	3.50 3.50	3.94 3.94	4.38 4.38	4.81 4.81	5.25 5.25	5.69 5.69	7/16 n	7/16 n
14	5.25 5.25	6.00 6.00	6.75 6.75	7.50 7.50	8.25 8.25	9.00 9.00	9.75 9.75	12/16 n	12/16 n
15	6.56 6.56	7.50 7.50	8.44 8.44	9.38 9.38	10.31 10.31	11.25 11.25	12.19 12.19	15/16 n	15/16 n
16	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0
17	-4.00 0	-4.00 0	-4.00 0	- 4.00 0	- 4.00 0	- 4.00 0	- 4.00 0	- 4	0
LENGTH COEFFICIENTS									
	H	H	H	H	H	H	H	H	
Horizontal	0.875000	1.000000	1.125000	1.250000	1.375000	1.500000	1.625000	1/8 n	
Diagonal	1.328768	1.414214	1.505199	1.600781	1.700184	1.802776	1.908042	1/8 N	
Vertical	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS									
Between horizontal and diagonal members	49	45	42	39	36	34	32	8/n = tan a	
Between diagonal and vertical members	41	45	48	51	54	56	58	90 - a	
Between vertical and horizontal members	90	90	90	90	90	90	90	90	

TRUSSES – STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES – FLAT PRATT

10 PANELS AT TOP & BOTTOM



$n = \frac{L}{H}$ $N = \sqrt{n^2 + 100}$

To find the stress in any member when the truss is loaded at:

1. TOP – multiply the panel point load P by the stress coefficient under P
2. BOTTOM – multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM – add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (–) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

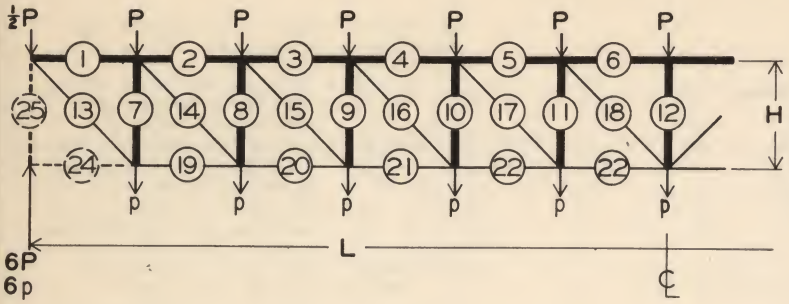
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-3.15	-3.15	- 3.60	- 3.60	- 4.05	- 4.05	- 4.50	- 4.50	- 4.95	- 4.95	- 5.40	- 5.40	- 5.85	- 5.85	- 9/20 n	- 9/20 n
2	-5.60	-5.60	- 6.40	- 6.40	- 7.20	- 7.20	- 8.00	- 8.00	- 8.80	- 8.80	- 9.60	- 9.60	-10.40	-10.40	- 16/20 n	- 16/20 n
3	-7.35	-7.35	- 8.40	- 8.40	- 9.45	- 9.45	-10.50	-10.50	-11.55	-11.55	-12.60	-12.60	-13.65	-13.65	- 21/20 n	- 21/20 n
4	-8.40	-8.40	- 9.60	- 9.60	-10.80	-10.80	-12.00	-12.00	-13.20	-13.20	-14.40	-14.40	-15.60	-15.60	- 24/20 n	- 24/20 n
5	-8.75	-8.75	-10.00	-10.00	-11.25	-11.25	-12.50	-12.50	-13.75	-13.75	-15.00	-15.00	-16.25	-16.25	- 25/20 n	- 25/20 n
6	-4.50	-3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 9/2	- 7/2
7	-3.50	-2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 7/2	- 5/2
8	-2.50	-1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 5/2	- 3/2
9	-1.50	-0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 3/2	- 1/2
10	-1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1	0
11	5.49	5.49	5.76	5.76	6.05	6.05	6.36	6.36	6.69	6.69	7.03	7.03	7.38	7.38	9/20 N	9/20 N
12	4.27	4.27	4.48	4.48	4.71	4.71	4.95	4.95	5.20	5.20	5.47	5.47	5.74	5.74	7/20 N	7/20 N
13	3.05	3.05	3.20	3.20	3.36	3.36	3.54	3.54	3.72	3.72	3.91	3.91	4.10	4.10	5/20 N	5/20 N
14	1.83	1.83	1.92	1.92	2.02	2.02	2.12	2.12	2.23	2.23	2.34	2.34	2.46	2.46	3/20 N	3/20 N
15	0.61	0.61	0.64	0.64	0.67	0.67	0.71	0.71	0.74	0.74	0.78	0.78	0.82	0.82	1/20 N	1/20 N
16	3.15	3.15	3.60	3.60	4.05	4.05	4.50	4.50	4.95	4.95	5.40	5.40	5.85	5.85	9/20 n	9/20 n
17	5.60	5.60	6.40	6.40	7.20	7.20	8.00	8.00	8.80	8.80	9.60	9.60	10.40	10.40	16/20 n	16/20 n
18	7.35	7.35	8.40	8.40	9.45	9.45	10.50	10.50	11.55	11.55	12.60	12.60	13.65	13.65	21/20 n	21/20 n
19	8.40	8.40	9.60	9.60	10.80	10.80	12.00	12.00	13.20	13.20	14.40	14.40	15.60	15.60	24/20 n	24/20 n
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	-5.00	0	- 5.00	0	- 5.00	0	- 5.00	0	- 5.00	0	- 5.00	0	- 5.00	0	- 5	0

LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
Horizontal	0.700000	0.800000	0.900000	1.000000	1.100000	1.200000	1.300000	1/10 n
Diagonal	1.220656	1.280625	1.345362	1.414214	1.486607	1.562050	1.640122	1/10 N
Vertical	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between horizontal and diagonal members	55	51	48	45	42	40	38	10/n = tan a
Between diagonal and vertical members	35	39	42	45	48	50	52	90 – a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT PRATT

12 PANELS AT TOP & BOTTOM



$n = \frac{L}{H}$ $N = \sqrt{n^2+144}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

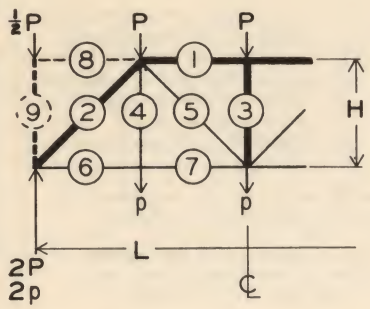
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	- 3.21	- 3.21	- 3.67	- 3.67	- 4.13	- 4.13	- 4.58	- 4.58	- 5.04	- 5.04	- 5.50	- 5.50	- 5.96	- 5.96	- 11/24 n	- 11/24 n
2	- 5.83	- 5.83	- 6.67	- 6.67	- 7.50	- 7.50	- 8.33	- 8.33	- 9.17	- 9.17	-10.00	-10.00	-10.83	-10.83	- 20/24 n	- 20/24 n
3	- 7.88	- 7.88	- 9.00	- 9.00	-10.13	-10.13	-11.25	-11.25	-12.38	-12.38	-13.50	-13.50	-14.63	-14.63	- 27/24 n	- 27/24 n
4	- 9.33	- 9.33	-10.67	-10.67	-12.00	-12.00	-13.33	-13.33	-14.67	-14.67	-16.00	-16.00	-17.33	-17.33	- 32/24 n	- 32/24 n
5	-10.21	-10.21	-11.67	-11.67	-13.13	-13.13	-14.58	-14.58	-16.04	-16.04	-17.50	-17.50	-18.96	-18.96	- 35/24 n	- 35/24 n
6	-10.50	-10.50	-12.00	-12.00	-13.50	-13.50	-15.00	-15.00	-16.50	-16.50	-18.00	-18.00	-19.50	-19.50	- 36/24 n	- 36/24 n
7	- 5.50	- 4.50	- 5.50	- 4.50	- 5.50	- 4.50	- 5.50	- 4.50	- 5.50	- 4.50	- 5.50	- 4.50	- 5.50	- 4.50	- 11/2	- 9/2
8	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 9/2	- 7/2
9	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 7/2	- 5/2
10	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 5/2	- 3/2
11	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 3/2	- 1/2
12	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1	0
13	6.37	6.37	6.61	6.61	6.88	6.88	7.16	7.16	7.46	7.46	7.78	7.78	8.11	8.11	11/24 N	11/24 N
14	5.21	5.21	5.41	5.41	5.63	5.63	5.86	5.86	6.10	6.10	6.36	6.36	6.63	6.63	9/24 N	9/24 N
15	4.05	4.05	4.21	4.21	4.38	4.38	4.56	4.56	4.75	4.75	4.95	4.95	5.16	5.16	7/24 N	7/24 N
16	2.89	2.89	3.00	3.00	3.13	3.13	3.25	3.25	3.39	3.39	3.54	3.54	3.69	3.69	5/24 N	5/24 N
17	1.74	1.74	1.80	1.80	1.88	1.88	1.95	1.95	2.03	2.03	2.12	2.12	2.21	2.21	3/24 N	3/24 N
18	0.58	0.58	0.60	0.60	0.63	0.63	0.65	0.65	0.68	0.68	0.71	0.71	0.74	0.74	1/24 N	1/24 N
19	3.21	3.21	3.67	3.67	4.13	4.13	4.58	4.58	5.04	5.04	5.50	5.50	5.96	5.96	11/24 n	11/24 n
20	5.83	5.83	6.67	6.67	7.50	7.50	8.33	8.33	9.17	9.17	10.00	10.00	10.83	10.83	20/24 n	20/24 n
21	7.88	7.88	9.00	9.00	10.13	10.13	11.25	11.25	12.38	12.38	13.50	13.50	14.63	14.63	27/24 n	27/24 n
22	9.33	9.33	10.67	10.67	12.00	12.00	13.33	13.33	14.67	14.67	16.00	16.00	17.33	17.33	32/24 n	32/24 n
23	10.21	10.21	11.67	11.67	13.13	13.13	14.58	14.58	16.04	16.04	17.50	17.50	18.96	18.96	35/24 n	35/24 n
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	- 6.00	0	- 6.00	0	- 6.00	0	- 6.00	0	- 6.00	0	- 6.00	0	- 6.00	0	- 6	0

LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
Horizontal	0.583333	0.666667	0.750000	0.833333	0.916667	1.000000	1.083333	1/12 n
Diagonal	1.157704	1.201850	1.250000	1.301708	1.356568	1.414214	1.474317	1/12 N
Vertical	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between horizontal and diagonal members	60	56	53	50	47	45	43	12/n = tan a
Between diagonal and vertical members	30	34	37	40	43	45	47	90 - a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - MODIFIED FLAT PRATT

4 PANELS AT TOP & BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2+16}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

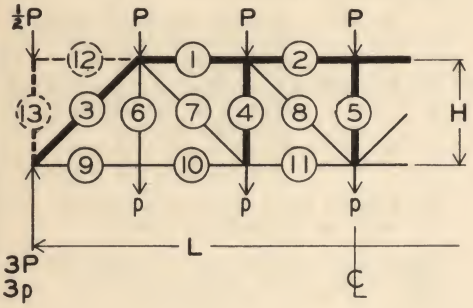
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-3.50	-3.50	-4.00	-4.00	-4.50	-4.50	-5.00	-5.00	-5.50	-5.50	-6.00	-6.00	-6.50	-6.50	- 1/2 n	- 1/2 n
2	-3.02	-3.02	-3.35	-3.35	-3.69	-3.69	-4.04	-4.04	-4.39	-4.39	-4.74	-4.74	-5.10	-5.10	- 3/8 N	- 3/8 N
3	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	- 1	0
4	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
5	1.01	1.01	1.12	1.12	1.23	1.23	1.35	1.35	1.46	1.46	1.58	1.58	1.70	1.70	1/8 N	1/8 N
6	2.63	2.63	3.00	3.00	3.38	3.38	3.75	3.75	4.13	4.13	4.50	4.50	4.88	4.88	3/8 n	3/8 n
7	2.63	2.63	3.00	3.00	3.38	3.38	3.75	3.75	4.13	4.13	4.50	4.50	4.88	4.88	3/8 n	3/8 n
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	- 1/2	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
Horizontal	1.750000		2.000000		2.250000		2.500000		2.750000		3.000000		3.250000		1/4 n	
Diagonal	2.015564		2.236068		2.462214		2.692582		2.926175		3.162278		3.400368		1/4 N	
Vertical	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	30		27		24		22		20		18		17		4/n = tan a	
Between diagonal and vertical members	60		63		66		68		70		72		73		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS & ANGLES - MODIFIED FLAT PRATT

6 PANELS AT TOP & BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2+36}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

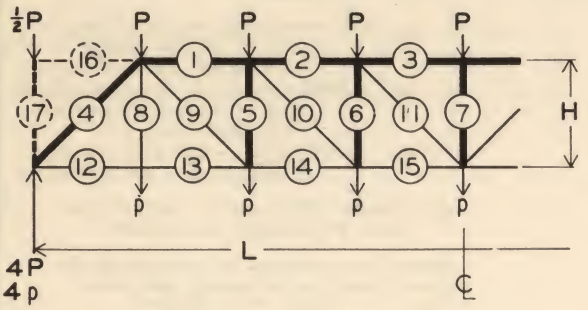
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-4.67	-4.67	-5.33	-5.33	-6.00	-6.00	-6.67	-6.67	-7.33	-7.33	-8.00	-8.00	-8.67	-8.67	- 2/3 n	- 2/3 n
2	-5.25	-5.25	-6.00	-6.00	-6.75	-6.75	-7.50	-7.50	-8.25	-8.25	-9.00	-9.00	-9.75	-9.75	- 3/4 n	- 3/4 n
3	-3.84	-3.84	-4.17	-4.17	-4.51	-4.51	-4.86	-4.86	-5.22	-5.22	-5.59	-5.59	-5.97	-5.97	- 5/12 N	- 5/12 N
4	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	- 3/2	- 1/2
5	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	-1.00	0	- 1	0
6	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
7	2.30	2.30	2.50	2.50	2.70	2.70	2.92	2.92	3.13	3.13	3.35	3.35	3.58	3.58	1/4 N	1/4 N
8	0.77	0.77	0.83	0.83	0.90	0.90	0.97	0.97	1.04	1.04	1.12	1.12	1.19	1.19	1/12 N	1/12 N
9	2.92	2.92	3.33	3.33	3.75	3.75	4.17	4.17	4.58	4.58	5.00	5.00	5.42	5.42	5/12 n	5/12 n
10	2.92	2.92	3.33	3.33	3.75	3.75	4.17	4.17	4.58	4.58	5.00	5.00	5.42	5.42	5/12 n	5/12 n
11	4.67	4.67	5.33	5.33	6.00	6.00	6.67	6.67	7.33	7.33	8.00	8.00	8.67	8.67	2/3 n	2/3 n
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	-0.50	0	- 1/2	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
Horizontal	1.166667		1.333333		1.500000		1.666667		1.833333		2.000000		2.166667		1/6 n	
Diagonal	1.536591		1.666667		1.802776		1.943651		2.088327		2.236068		2.386304		1/6 N	
Vertical	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	41		37		34		31		29		27		25		6/n = tan a	
Between diagonal and vertical members	49		53		56		59		61		63		65		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - MODIFIED FLAT PRATT

8 PANELS AT TOP & BOTTOM



$n = \frac{L}{H}$

$N = \sqrt{n^2+64}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

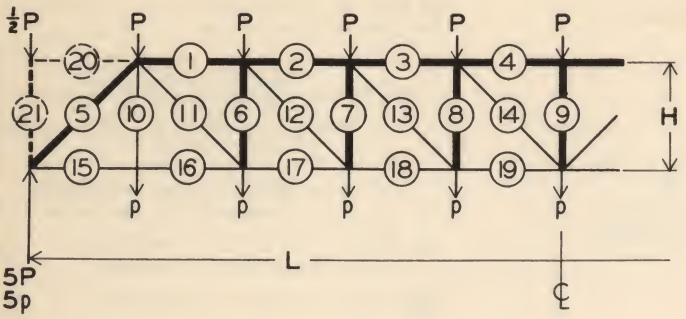
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-5.25	-5.25	-6.00	-6.00	-6.75	-6.75	- 7.50	- 7.50	- 8.25	- 8.25	- 9.00	- 9.00	- 9.75	- 9.75	- 3/4 n	- 3/4 n
2	-6.56	-6.56	-7.50	-7.50	-8.44	-8.44	- 9.38	- 9.38	-10.31	-10.31	-11.25	-11.25	-12.19	-12.19	- 15/16 n	- 15/16 n
3	-7.00	-7.00	-8.00	-8.00	-9.00	-9.00	-10.00	-10.00	-11.00	-11.00	-12.00	-12.00	-13.00	-13.00	- n	- n
4	-4.65	-4.65	-4.95	-4.95	-5.27	-5.27	- 5.60	- 5.60	- 5.95	- 5.95	- 6.31	- 6.31	- 6.68	- 6.68	- 7/16 N	- 7/16 N
5	-2.50	-1.50	-2.50	-1.50	-2.50	-1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 5/2	- 3/2
6	-1.50	-0.50	-1.50	-0.50	-1.50	-0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 3/2	- 1/2
7	-1.00	0	-1.00	0	-1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1	0
8	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
9	3.32	3.32	3.54	3.54	3.76	3.76	4.00	4.00	4.25	4.25	4.51	4.51	4.77	4.77	5/16 N	5/16 N
10	1.99	1.99	2.12	2.12	2.26	2.26	2.40	2.40	2.55	2.55	2.70	2.70	2.86	2.86	3/16 N	3/16 N
11	0.66	0.66	0.71	0.71	0.75	0.75	0.80	0.80	0.85	0.85	0.90	0.90	0.95	0.95	1/16 N	1/16 N
12	3.06	3.06	3.50	3.50	3.94	3.94	4.38	4.38	4.81	4.81	5.25	5.25	5.69	5.69	7/16 n	7/16 n
13	3.06	3.06	3.50	3.50	3.94	3.94	4.38	4.38	4.81	4.81	5.25	5.25	5.69	5.69	7/16 n	7/16 n
14	5.25	5.25	6.00	6.00	6.75	6.75	7.50	7.50	8.25	8.25	9.00	9.00	9.75	9.75	3/4 n	3/4 n
15	6.56	6.56	7.50	7.50	8.44	8.44	9.38	9.38	10.31	10.31	11.25	11.25	12.19	12.19	15/16 n	15/16 n
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-0.50	0	-0.50	0	-0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 1/2	0

LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
Horizontal	0.875000	1.000000	1.125000	1.250000	1.375000	1.500000	1.625000	1/8 n
Diagonal	1.328768	1.414214	1.505199	1.600781	1.700184	1.802776	1.908042	1/8 N
Vertical	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between horizontal and diagonal members	49	45	42	39	36	34	32	8/n = tan a
Between diagonal and vertical members	41	45	48	51	54	56	58	90 - a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - MODIFIED FLAT PRATT

10 PANELS AT TOP & BOTTOM



$n = \frac{L}{H}$ $N = \sqrt{n^2+100}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

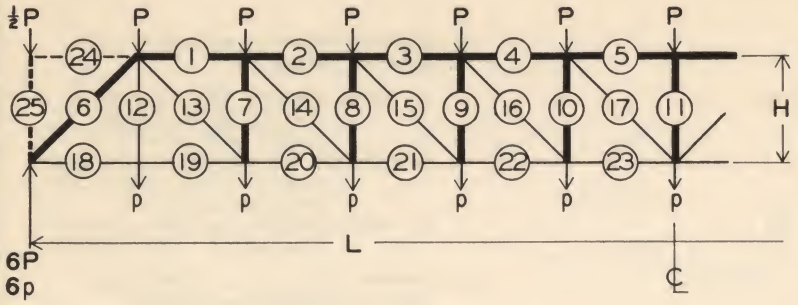
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-5.60	-5.60	- 6.40	- 6.40	- 7.20	- 7.20	- 8.00	- 8.00	- 8.80	- 8.80	- 9.60	- 9.60	-10.40	-10.40	- 4/5 n	- 4/5 n
2	-7.35	-7.35	- 8.40	- 8.40	- 9.45	- 9.45	-10.50	-10.50	-11.55	-11.55	-12.60	-12.60	-13.65	-13.65	- 21/20 n	- 21/20 n
3	-8.40	-8.40	- 9.60	- 9.60	-10.80	-10.80	-12.00	-12.00	-13.20	-13.20	-14.40	-14.40	-15.60	-15.60	- 6/5 n	- 6/5 n
4	-8.75	-8.75	-10.00	-10.00	-11.25	-11.25	-12.50	-12.50	-13.75	-13.75	-15.00	-15.00	-16.25	-16.25	- 5/4 n	- 5/4 n
5	-5.49	-5.49	- 5.76	- 5.76	- 6.05	- 6.05	- 6.36	- 6.36	- 6.69	- 6.69	- 7.03	- 7.03	- 7.38	- 7.38	- 9/20 N	- 9/20 N
6	-2.50	-2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 7/2	- 5/2
7	-2.50	-1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 5/2	- 3/2
8	-1.50	-0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 3/2	- 1/2
9	-1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1	0
10	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
11	4.27	4.27	4.48	4.48	4.71	4.71	4.95	4.95	5.20	5.20	5.47	5.47	5.74	5.74	7/20 N	7/20 N
12	3.05	3.05	3.20	3.20	3.36	3.36	3.54	3.54	3.72	3.72	3.91	3.91	4.10	4.10	1/4 N	1/4 N
13	1.83	1.83	1.92	1.92	2.02	2.02	2.12	2.12	2.23	2.23	2.34	2.34	2.46	2.46	3/20 N	3/20 N
14	0.61	0.61	0.64	0.64	0.67	0.67	0.71	0.71	0.74	0.74	0.78	0.78	0.82	0.82	1/20 N	1/20 N
15	3.15	3.15	3.60	3.60	4.05	4.05	4.50	4.50	4.95	4.95	5.40	5.40	5.85	5.85	9/20 n	9/20 n
16	3.15	3.15	3.60	3.60	4.05	4.05	4.50	4.50	4.95	4.95	5.40	5.40	5.85	5.85	9/20 n	9/20 n
17	5.60	5.60	6.40	6.40	7.20	7.20	8.00	8.00	8.80	8.80	9.60	9.60	10.40	10.40	4/5 n	4/5 n
18	7.35	7.35	8.40	8.40	9.45	9.45	10.50	10.50	11.55	11.55	12.60	12.60	13.65	13.65	21/20 n	21/20 n
19	8.40	8.40	9.60	9.60	10.80	10.80	12.00	12.00	13.20	13.20	14.40	14.40	15.60	15.60	6/5 n	6/5 n
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	-0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 1/2	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
Horizontal	0.700000		0.800000		0.900000		1.000000		1.100000		1.200000		1.300000		1/10 n	
Diagonal	1.220656		1.280625		1.345362		1.414214		1.486607		1.562050		1.640122		1/10 N	
Vertical	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	55		51		48		45		42		40		38		10/n = tan a	
Between diagonal and vertical members	35		39		42		45		48		50		52		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - MODIFIED FLAT PRATT

12 PANELS AT TOP & BOTTOM



$n = \frac{L}{H}$ $N = \sqrt{n^2+144}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

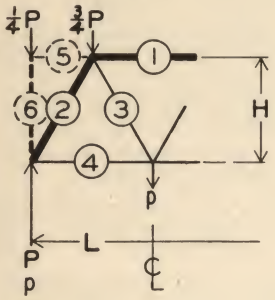
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	- 5.83	- 5.83	- 6.67	- 6.67	- 7.50	- 7.50	- 8.33	- 8.33	- 9.17	- 9.17	-10.00	-10.00	-10.83	-10.83	- 20/24 n	- 20/24 n
2	- 7.88	- 7.88	- 9.00	- 9.00	-10.13	-10.13	-11.25	-11.25	-12.38	-12.38	-13.50	-13.50	-14.63	-14.63	- 27/24 n	- 27/24 n
3	- 9.33	- 9.33	-10.67	-10.67	-12.00	-12.00	-13.33	-13.33	-14.67	-14.67	-16.00	-16.00	-17.33	-17.33	- 32/24 n	- 32/24 n
4	-10.21	-10.21	-11.67	-11.67	-13.13	-13.13	-14.58	-14.58	-16.04	-16.04	-17.50	-17.50	-18.96	-18.96	- 35/24 n	- 35/24 n
5	-10.50	-10.50	-12.00	-12.00	-13.50	-13.50	-15.00	-15.00	-16.50	-16.50	-18.00	-18.00	-19.50	-19.50	- 36/24 n	- 36/24 n
6	- 6.37	- 6.37	- 6.61	- 6.61	- 6.88	- 6.88	- 7.16	- 7.16	- 7.46	- 7.46	- 7.78	- 7.78	- 8.11	- 8.11	- 11/24 N	- 11/24 N
7	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 4.50	- 3.50	- 9/2	- 7/2
8	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 3.50	- 2.50	- 7/2	- 5/2
9	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 2.50	- 1.50	- 5/2	- 3/2
10	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 1.50	- 0.50	- 3/2	- 1/2
11	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1.00	0	- 1	0
12	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1
13	5.21	5.21	5.41	5.41	5.63	5.63	5.86	5.86	6.10	6.10	6.36	6.36	6.63	6.63	9/24 N	9/24 N
14	4.05	4.05	4.21	4.21	4.38	4.38	4.56	4.56	4.75	4.75	4.95	4.95	5.16	5.16	7/24 N	7/24 N
15	2.89	2.89	3.00	3.00	3.13	3.13	3.25	3.25	3.39	3.39	3.54	3.54	3.69	3.69	5/24 N	5/24 N
16	1.74	1.74	1.80	1.80	1.88	1.88	1.95	1.95	2.03	2.03	2.12	2.12	2.21	2.21	3/24 N	3/24 N
17	0.58	0.58	0.60	0.60	0.63	0.63	0.65	0.65	0.68	0.68	0.71	0.71	0.74	0.74	1/24 N	1/24 N
18	3.21	3.21	3.67	3.67	4.13	4.13	4.58	4.58	5.04	5.04	5.50	5.50	5.96	5.96	11/24 n	11/24 n
19	3.21	3.21	3.67	3.67	4.13	4.13	4.58	4.58	5.04	5.04	5.50	5.50	5.96	5.96	11/24 n	11/24 n
20	5.83	5.83	6.67	6.67	7.50	7.50	8.33	8.33	9.17	9.17	10.00	10.00	10.83	10.83	20/24 n	20/24 n
21	7.88	7.88	9.00	9.00	10.13	10.13	11.25	11.25	12.38	12.38	13.50	13.50	14.63	14.63	27/24 n	27/24 n
22	9.33	9.33	10.67	10.67	12.00	12.00	13.33	13.33	14.67	14.67	16.00	16.00	17.33	17.33	32/24 n	32/24 n
23	10.21	10.21	11.67	11.67	13.13	13.13	14.58	14.58	16.04	16.04	17.50	17.50	18.96	18.96	35/24 n	35/24 n
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 0.50	0	- 1/2	0

LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
Horizontal	0.583333	0.666667	0.750000	0.833333	0.916667	1.000000	1.083333	1/12 n
Diagonal	1.157704	1.201850	1.250000	1.301708	1.356568	1.414214	1.474317	1/12 N
Vertical	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between horizontal and diagonal members	60	56 •	53	50	47	45	43	12/n = tan a
Between diagonal and vertical members	30	34	37	40	43	45	47	90 - a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT WARREN

2 PANELS AT BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 16}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

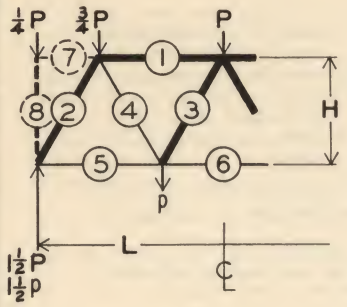
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-1.31	-1.75	-1.50	-2.00	-1.69	-2.25	-1.88	-2.50	-2.06	-2.75	-2.25	-3.00	-2.44	-3.25	- 3/16 n	- 1/4 n
2	-1.51	-1.01	-1.68	-1.12	-1.85	-1.23	-2.02	-1.35	-2.19	-1.46	-2.37	-1.58	-2.55	-1.70	- 3/16 N	- 1/8 N
3	0	1.01	0	1.12	0	1.23	0	1.35	0	1.46	0	1.58	0	1.70	0	1/8 N
4	1.31	0.88	1.50	1.00	1.69	1.13	1.88	1.25	2.06	1.38	2.25	1.50	2.44	1.63	3/16 n	1/8 n
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	- 1/4	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 4	3.500000		4.000000		4.500000		5.000000		5.500000		6.000000		6.500000		1/2 n	
2, 3	2.015564		2.236068		2.462214		2.692582		2.926175		3.162278		3.400368		1/4 N	
5	1.750000		2.000000		2.250000		2.500000		2.750000		3.000000		3.250000		1/4 n	
6	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	30		27		24		22		20		18		17		4/n = tan a	
Between diagonal members	120		126		132		136		140		144		146		180 - 2a	
Between vertical and diagonal members	60		63		66		68		70		72		73		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT WARREN

3 PANELS AT BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2 + 36}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

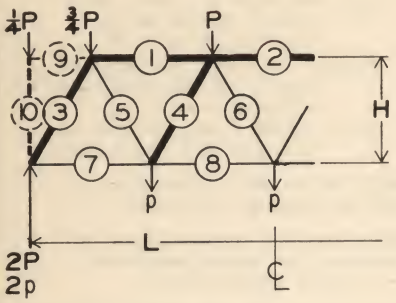
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.04	-2.33	-2.33	-2.67	-2.63	-3.00	-2.92	-3.33	-3.21	-3.67	-3.50	-4.00	-3.79	-4.33	- 7/24 n	- 1/3 n
2	-1.92	-1.54	-2.08	-1.67	-2.25	-1.80	-2.43	-1.94	-2.61	-2.09	-2.80	-2.24	-2.98	-2.39	- 5/24 N	- 1/6 N
3	-0.77	0	-0.83	0	-0.90	0	-0.97	0	-1.04	0	-1.12	0	-1.19	0	- 1/12 N	0
4	0.77	1.54	0.83	1.67	0.90	1.80	0.97	1.94	1.04	2.09	1.12	2.24	1.19	2.39	1/12 N	1/6 N
5	1.46	1.17	1.67	1.33	1.88	1.50	2.08	1.67	2.29	1.83	2.50	2.00	2.71	2.17	5/24 n	1/6 n
6	2.63	2.33	3.00	2.67	3.38	3.00	3.75	3.33	4.13	3.67	4.50	4.00	4.88	4.33	3/8 n	1/3 n
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	- 1/4	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 5, 6	2.333333		2.666667		3.000000		3.333333		3.666667		4.000000		4.333333		1/3 n	
2, 3, 4	1.536591		1.666667		1.802776		1.943651		2.088327		2.236068		2.386304		1/6 N	
7	1.166667		1.333333		1.500000		1.666667		1.833333		2.000000		2.166667		1/6 n	
8	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	41		37		34		31		29		27		25		6/n = tan a	
Between diagonal members	98		106		112		118		122		126		130		180 - 2a	
Between vertical and diagonal members	49		53		56		59		61		63		65		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT WARREN

4 PANELS AT BOTTOM



$$n = \frac{L}{H}$$

$$N = \sqrt{n^2+64}$$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

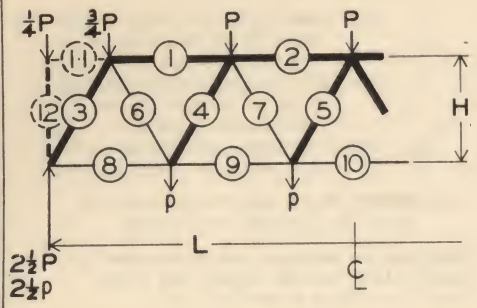
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.41	-2.63	-2.75	-3.00	-3.09	-3.38	-3.44	-3.75	-3.78	-4.13	-4.13	-4.50	-4.47	-4.88	- 11/32 n	- 3/8 n
2	-3.28	-3.50	-3.75	-4.00	-4.22	-4.50	-4.69	-5.00	-5.16	-5.50	-5.63	-6.00	-6.09	-6.50	- 15/32 n	- 1/2 n
3	-2.33	-1.99	-2.47	-2.12	-2.63	-2.26	-2.80	-2.40	-2.98	-2.55	-3.15	-2.70	-3.34	-2.86	- 7/32 N	- 3/16 N
4	-1.33	-0.66	-1.41	-0.71	-1.51	-0.75	-1.60	-0.80	-1.70	-0.85	-1.80	-0.90	-1.91	-0.95	- 1/8 N	- 1/16 N
5	1.33	1.99	1.41	2.12	1.51	2.26	1.60	2.40	1.70	2.55	1.80	2.70	1.91	2.86	1/8 N	3/16 N
6	0	0.66	0	0.71	0	0.75	0	0.80	0	0.85	0	0.90	0	0.95	0	1/16 N
7	1.53	1.31	1.75	1.50	1.97	1.69	2.19	1.88	2.41	2.06	2.63	2.25	2.84	2.44	7/32 n	3/16 n
8	3.28	3.06	3.75	3.50	4.22	3.94	4.69	4.38	5.16	4.81	5.63	5.25	6.09	5.69	15/32 n	7/16 n
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	- 1/4	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 7, 8	1.750000		2.000000		2.250000		2.500000		2.275000		3.000000		3.250000		1/4 n	
3, 4, 5, 6	1.328768		1.414214		1.505199		1.600781		1.700184		1.802776		1.908042		1/8 N	
9	0.875000		1.000000		1.125000		1.250000		1.375000		1.500000		1.625000		1/8 n	
10	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	49		45		42		39		36		34		32		8/n = tan a	
Between diagonal members	82		90		96		102		108		112		116		180 - 2a	
Between vertical and diagonal members	41		45		48		51		54		56		58		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT WARREN

5 PANELS AT BOTTOM



$n = \frac{L}{H}$ •

$N = \sqrt{n^2+100}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

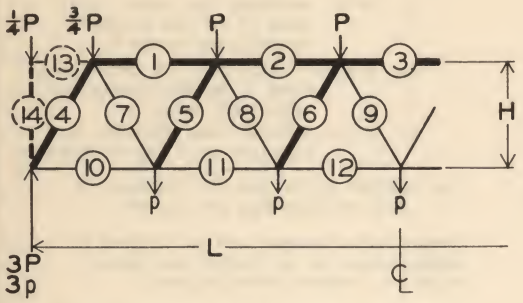
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	- 2.63	- 2.80	- 3.00	- 3.20	- 3.38	- 3.60	- 3.75	- 4.00	- 4.13	- 4.40	- 4.50	- 4.80	- 4.88	- 5.20	- 15/40 n	- 16/40 n
2	- 4.03	- 4.20	- 4.60	- 4.80	- 5.18	- 5.40	- 5.75	- 6.00	- 6.33	- 6.60	- 6.90	- 7.20	- 7.48	- 7.80	- 23/40 n	- 24/40 n
3	- 2.75	- 2.44	- 2.88	- 2.56	- 3.03	- 2.69	- 3.18	- 2.83	- 3.35	- 2.97	- 3.52	- 3.12	- 3.69	- 3.28	- 9/40 N	- 8/40 N
4	- 1.83	- 1.22	- 1.92	- 1.28	- 2.02	- 1.35	- 2.12	- 1.41	- 2.23	- 1.49	- 2.34	- 1.56	- 2.46	- 1.64	- 6/40 N	- 4/40 N
5	- 0.61	0	- 0.64	0	- 0.67	0	- 0.71	0	- 0.74	0	- 0.78	0	- 0.82	0	- 2/40 N	0
6	1.83	2.44	1.92	2.56	2.02	2.69	2.12	2.83	2.23	2.97	2.34	3.12	2.46	3.28	6/40 N	8/40 N
7	0.61	1.22	0.64	1.28	0.67	1.35	0.71	1.41	0.74	1.49	0.78	1.56	0.82	1.64	2/40 N	4/40 N
8	1.58	1.40	1.80	1.60	2.03	1.80	2.25	2.00	2.48	2.20	2.70	2.40	2.93	2.60	9/40 n	8/40 n
9	3.68	3.50	4.20	4.00	4.73	4.50	5.25	5.00	5.78	5.50	6.30	6.00	6.83	6.50	21/40 n	20/40 n
10	4.38	4.20	5.00	4.20	5.63	5.40	6.25	6.00	6.88	6.60	7.50	7.20	8.13	7.80	25/40 n	24/40 n
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	- 0.25	0	- 0.25	0	- 0.25	0	- 0.25	0	- 0.25	0	- 0.25	0	- 0.25	0	- 1/4	0

	LENGTH COEFFICIENTS							
	H	H	H	H	H	H	H	H
1, 2, 8, 9, 10	1.400000	1.600000	1.800000	2.000000	2.200000	2.400000	2.600000	1/5 n
3, 4, 5, 6, 7	1.220656	1.280625	1.345362	1.414214	1.486607	1.562050	1.640122	1/10 N
11	0.700000	0.800000	0.900000	1.000000	1.100000	1.200000	1.300000	1/10 n
12	1.000000	1.000000	1.0000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between horizontal and diagonal members	55	51	48	45	42	40	38	10/n = tan a
Between diagonal members	70	78	84	90	96	100	104	180 - 2a
Between vertical and diagonal members	35	39	42	45	48	50	52	90 - a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT WARREN

6 PANELS AT BOTTOM



$n = \frac{L}{H}$

$N = \sqrt{n^2+144}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

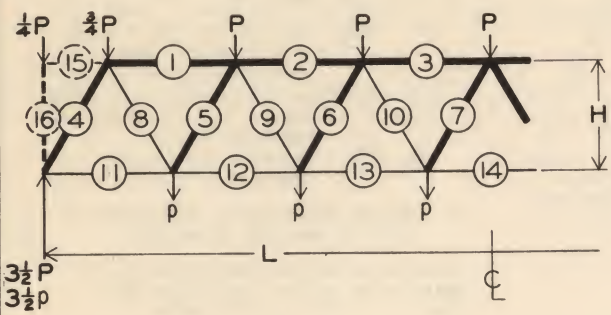
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.77	-2.92	-3.17	-3.33	-3.56	-3.75	-3.96	-4.17	-4.35	-4.58	-4.75	-5.00	-5.15	-5.42	- 19/48 n	- 20/48 n
2	-4.52	-4.67	-5.17	-5.33	-5.81	-6.00	-6.46	-6.67	-7.10	-7.33	-7.75	-8.00	-8.40	-8.67	- 31/48 n	- 32/48 n
3	-5.10	-5.25	-5.83	-6.00	-6.56	-6.75	-7.29	-7.50	-8.02	-8.25	-8.75	-9.00	-9.48	-9.75	- 35/48 n	- 36/48 n
4	-3.18	-2.89	-3.31	-3.00	-3.44	-3.13	-3.58	-3.25	-3.73	-3.39	-3.89	-3.54	-4.06	-3.69	- 11/48 N	- 10/48 N
5	-2.32	-1.74	-2.40	-1.80	-2.50	-1.88	-2.60	-1.95	-2.71	-2.03	-2.83	-2.12	-2.95	-2.21	- 8/48 N	- 6/48 N
6	-1.16	-0.58	-1.20	-0.60	-1.25	-0.63	-1.30	-0.65	-1.36	-0.68	-1.41	-0.71	-1.47	-0.74	- 4/48 N	- 2/48 N
7	2.32	2.89	2.40	3.00	2.50	3.13	2.60	3.25	2.71	3.39	2.83	3.54	2.95	3.69	8/48 N	10/48 N
8	1.16	1.74	1.20	1.80	1.25	1.88	1.30	1.95	1.36	2.03	1.41	2.12	1.47	2.21	4/48 N	6/48 N
9	0	0.58	0	0.60	0	0.63	0	0.65	0	0.68	0	0.71	0	0.74	0	2/48 N
10	1.60	1.46	1.83	1.67	2.06	1.87	2.29	2.08	2.52	2.29	2.75	2.50	2.98	2.71	11/48 n	10/48 n
11	3.94	3.79	4.50	4.33	5.06	4.87	5.62	5.42	6.19	5.96	6.75	6.50	7.31	7.04	27/48 n	26/48 n
12	5.10	4.96	5.83	5.67	6.56	6.37	7.29	7.08	8.02	7.79	8.75	8.50	9.48	9.21	36/48 n	34/48 n
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	- 1/4	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3, 10, 11, 12	1.166667		1.333333		1.500000		1.666667		1.833333		2.000000		2.166667		1/6 n	
4, 5, 6, 7, 8, 9	1.157704		1.201850		1.250000		1.301708		1.356568		1.414214		1.474317		1/12 N	
13	0.583333		0.666667		0.750000		0.833333		0.916667		1.000000		1.083333		1/12 n	
14	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	60		56		53		50		47		45		43		12/n = tan a	
Between diagonal members	60		68		74		80		86		90		94		180 - 2a	
Between vertical and diagonal members	30		34		37		40		43		45		47		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT WARREN

7 PANELS AT BOTTOM



$n = \frac{L}{H}$

$N = \sqrt{n^2+196}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

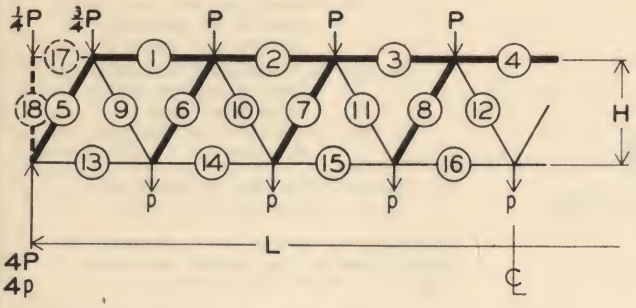
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.88	-3.00	-3.29	-3.43	-3.70	-3.86	-4.11	-4.29	-4.52	-4.71	- 4.93	- 5.14	- 5.34	- 5.57	- 23/56 n	- 24/56 n
2	-4.88	-5.00	-5.57	-5.71	-6.27	-6.43	-6.96	-7.14	-7.66	-7.86	- 8.36	- 8.57	- 9.05	- 9.29	- 39/56 n	- 40/56 n
3	-5.88	-6.00	-6.71	-6.86	-7.55	-7.71	-8.39	-8.57	-9.23	-9.43	-10.07	-10.29	-10.91	-11.14	- 47/56 n	- 48/56 N
4	-3.63	-3.35	-3.74	-3.46	-3.86	-3.57	-3.99	-3.69	-4.13	-3.82	- 4.28	- 3.95	- 4.44	- 4.09	- 13/56 N	- 12/56 N
5	-2.80	-2.24	-2.88	-2.30	-2.97	-2.38	-3.07	-2.46	-3.18	-2.54	- 3.29	- 2.63	- 3.41	- 2.73	- 10/56 N	- 8/56 N
6	-1.68	-1.12	-1.73	-1.15	-1.78	-1.19	-1.84	-1.23	-1.91	-1.27	- 1.98	- 1.32	- 2.05	- 1.36	- 6/56 N	- 4/56 N
7	-0.56	0	-0.58	0	-0.59	0	-0.61	0	-0.64	0	- 0.66	0	- 0.68	0	- 2/56 N	0
8	2.80	3.35	2.88	3.46	2.97	3.57	3.07	3.69	3.18	3.82	3.29	3.95	3.41	4.09	10/56 N	12/56 N
9	1.68	2.24	1.73	2.30	1.78	2.38	1.84	2.46	1.91	2.54	1.98	2.63	2.05	2.73	6/56 N	8/56 N
10	0.56	1.12	0.58	1.15	0.59	1.19	0.61	1.23	0.64	1.27	0.66	1.32	- 0.68	1.36	2/56 N	4/56 N
11	1.63	1.50	1.86	1.71	2.09	1.93	2.32	2.14	2.55	2.36	2.79	2.57	3.02	2.79	13/56 n	12/56 n
12	4.13	4.00	4.71	4.57	5.30	5.14	5.89	5.71	6.48	6.29	7.07	6.86	7.66	7.43	33/56 n	32/56 n
13	5.63	5.50	6.43	6.29	7.23	7.07	8.04	7.86	8.84	8.64	9.64	9.43	10.45	10.21	45/56 n	44/56 n
14	6.13	6.00	7.00	6.86	7.88	7.71	8.75	8.57	9.63	9.43	10.50	10.29	11.38	11.14	49/56 n	48/56 n
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	- 0.25	0	- 0.25	0	- 1/4	0

	LENGTH COEFFICIENTS							
	H	H	H	H	H	H	H	H
1, 2, 3, 11, 12, 13, 14	1.000000	1.142857	1.285714	1.428571	1.571429	1.714286	1.857143	1/7 n
4, 5, 6, 7, 8, 9, 10	1.118034	1.151751	1.188808	1.228904	1.271750	1.317078	1.364641	1/14 N
15	0.500000	0.571429	0.642857	0.714286	0.785714	0.857143	0.928571	1/14 n
16	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between horizontal and diagonal members	63	60	57	54	52	49	47	14/n = tan a
Between diagonal members	54	60	66	72	76	82	86	180 - 2a
Between diagonal and vertical members	27	30	33	36	38	41	43	90 - a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT WARREN

8 PANELS AT BOTTOM



$n = \frac{L}{H}$

$N = \sqrt{n^2+256}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

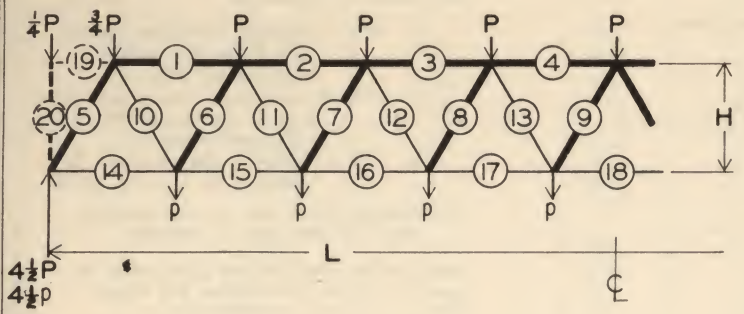
Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-2.95	-3.06	-3.38	-3.50	-3.80	-3.94	-4.22	- 4.38	- 4.64	- 4.81	- 5.06	- 5.25	- 5.48	- 5.69	- 27/64 n	- 28/64 n
2	-5.14	-5.25	-5.88	-6.00	-6.61	-6.75	-7.34	- 7.50	- 8.08	- 8.25	- 8.81	- 9.00	- 9.55	- 9.75	- 47/64 n	- 48/64 n
3	-6.45	-6.56	-7.38	-7.50	-8.30	-8.44	-9.22	- 9.38	-10.14	-10.31	-11.06	-11.25	-11.98	-12.19	- 59/64 n	- 60/64 n
4	-6.89	-7.00	-7.88	-8.00	-8.86	-9.00	-9.84	-10.00	-10.83	-11.00	-11.81	-12.00	-12.80	-13.00	- 63/64 n	- 64/64 n
5	-4.09	-3.82	-4.19	-3.91	-4.30	-4.02	-4.42	- 4.13	- 4.55	- 4.25	- 4.69	- 4.38	- 4.83	- 4.51	- 15/64 N	- 14/64 N
6	-3.27	-2.73	-3.35	-2.80	-3.44	-2.87	-3.54	- 2.95	- 3.64	- 3.03	- 3.75	- 3.13	- 3.87	- 3.22	- 12/64 N	- 10/64 N
7	-2.18	-1.64	-2.24	-1.68	-2.29	-1.72	-2.36	- 1.77	- 2.43	- 1.82	- 2.50	- 1.88	- 2.58	- 1.93	- 8/64 N	- 6/64 N
8	-1.09	-0.55	-1.12	-0.56	-1.15	-0.57	-1.18	- 0.59	- 1.21	- 0.61	- 1.25	- 0.63	- 1.29	- 0.64	- 4/64 N	- 2/64 N
9	3.27	3.82	3.36	3.91	3.44	4.02	3.54	4.13	3.64	4.25	3.75	4.38	3.87	4.51	12/64 N	14/64 N
10	2.18	2.73	2.24	2.80	2.29	2.87	2.36	2.95	2.43	3.03	2.50	3.13	2.58	3.22	8/64 N	10/64 N
11	1.09	1.64	1.12	1.68	1.15	1.72	1.18	1.77	1.21	1.82	1.25	1.88	1.29	1.93	4/64 N	6/64 N
12	0	0.55	0	0.56	0	0.57	0	0.59	0	0.61	0	0.63	0	0.64	0	2/64 N
13	1.64	1.53	1.88	1.75	2.11	1.97	2.34	2.19	2.58	2.41	2.81	2.63	3.05	2.84	15/64 n	14/64 n
14	4.27	4.16	4.88	4.75	5.48	5.34	6.09	5.94	6.70	6.53	7.31	7.13	7.92	7.72	39/64 n	38/64 n
15	6.02	5.91	6.88	6.75	7.73	7.59	8.59	8.44	9.45	9.28	10.31	10.13	11.17	10.97	55/64 n	54/64 n
16	6.89	6.78	7.88	7.75	8.86	8.72	9.84	9.69	10.83	10.66	11.81	11.63	12.80	12.59	63/64 n	62/64 n
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	-0.25	0	-0.25	0	-0.25	0	-0.25	0	- 0.25	0	- 0.25	0	- 0.25	0	- 1/4	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1,2,3,4,13,14,15,16	0.875000		1.000000		1.125000		1.250000		1.375000		1.500000		1.625000		1/8 n	
5,6,7,8,9,10,11,12	1.091516		1.118034		1.147347		1.179248		1.213530		1.250000		1.288471		1/16 N	
17	0.437500		0.500000		0.562500		0.625000		0.687500		0.750000		0.812500		1/16 n	
18	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	66		63		61		58		55		53		51		16/n = tan a	
Between diagonal members	48		54		58		64		70		74		78		180 - 2a	
Between diagonal and vertical members	24		27		29		32		35		37		39		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS, & ANGLES - FLAT WARREN

9 PANELS AT BOTTOM



$n = \frac{L}{H}$ $N = \sqrt{n^2 + 324}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

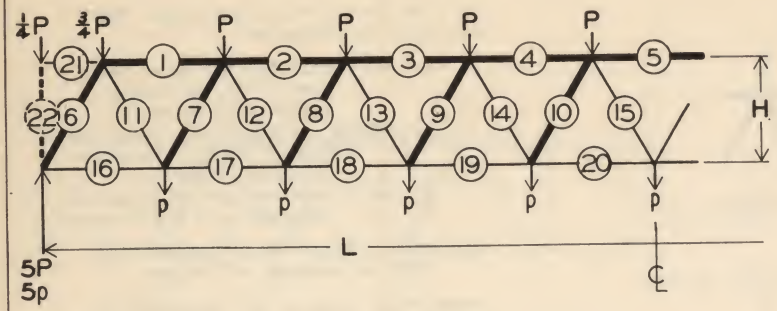
MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-3.01	-3.11	-3.44	-3.56	- 3.88	- 4.00	- 4.31	- 4.44	- 4.74	- 4.89	- 5.17	- 5.33	- 5.60	- 5.78	- 31/72 n	- 32/72 n
2	-5.35	-5.44	-6.11	-6.22	- 6.88	- 7.00	- 7.64	- 7.78	- 8.40	- 8.56	- 9.17	- 9.33	- 9.93	-10.11	- 55/72 n	- 56/72 n
3	-6.90	-7.00	-7.89	-8.00	- 8.88	- 9.00	- 9.86	-10.00	-10.85	-11.00	-11.83	-12.00	-12.82	-13.00	- 71/72 n	- 72/72 n
4	-7.68	-7.78	-8.78	-8.89	- 9.88	-10.00	-10.97	-11.11	-12.07	-12.22	-13.17	-13.33	-14.26	-14.44	- 79/72 n	- 80/72 n
5	-4.56	-4.29	-4.65	-4.38	- 4.75	- 4.47	- 4.86	- 4.58	- 4.98	- 4.69	- 5.11	- 4.81	- 5.24	- 4.93	- 17/72 N	- 16/72 N
6	-3.76	-3.22	-3.83	-3.28	- 3.91	- 3.35	- 4.00	- 3.43	- 4.10	- 3.52	- 4.21	- 3.61	- 4.32	- 3.70	- 14/72 N	- 12/72 N
7	-2.68	-2.15	-2.74	-2.19	- 2.80	- 2.24	- 2.86	- 2.29	- 2.93	- 2.34	- 3.00	- 2.40	- 3.08	- 2.47	- 10/72 N	- 8/72 N
8	-1.61	-1.07	-1.64	-1.09	- 1.68	- 1.12	- 1.72	- 1.14	- 1.76	- 1.17	- 1.80	- 1.20	- 1.85	- 1.23	- 6/72 N	- 4/72 N
9	-0.54	0	-0.55	0	- 0.56	0	- 0.57	0	- 0.59	0	- 0.60	0	- 0.62	0	- 2/72 N	0
10	3.76	4.29	3.83	4.38	3.91	4.47	4.00	4.58	4.10	4.69	4.21	4.81	4.32	4.93	14/72 N	16/72 N
11	2.68	3.22	2.74	3.28	2.80	3.35	2.86	3.43	2.93	3.52	3.00	3.61	3.08	3.70	10/72 N	12/72 N
12	1.61	2.15	1.64	2.19	1.68	2.24	1.72	2.29	1.76	2.34	1.80	2.40	1.85	2.47	6/72 N	8/72 N
13	0.54	1.07	0.55	1.09	0.56	1.12	0.57	1.14	0.59	1.17	0.60	1.20	0.62	1.23	2/72 N	4/72 N
14	1.65	1.56	1.89	1.78	2.13	2.00	2.36	2.22	2.60	2.44	2.83	2.67	3.07	2.89	17/72 n	16/72 n
15	4.38	4.28	5.00	4.89	5.63	5.50	6.25	6.11	6.88	6.72	7.50	7.33	8.13	7.94	45/72 n	44/72 n
16	6.32	6.22	7.22	7.11	8.13	8.00	9.03	8.89	9.93	9.78	10.83	10.67	11.74	11.56	65/72 n	64/72 n
17	7.49	7.39	8.56	8.44	9.63	9.50	10.69	10.56	11.76	11.61	12.83	12.67	13.90	13.72	77/72 n	76/72 n
18	7.88	7.78	9.00	8.89	10.13	10.00	11.25	11.11	12.38	12.22	13.50	13.33	14.63	14.44	81/72 n	80/72 n
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	-0.25	0	-0.25	0	- 0.25	0	- 0.25	0	- 0.25	0	- 0.25	0	- 0.25	0	- 1/4	0

LENGTH COEFFICIENTS								
	H	H	H	H	H	H	H	H
1, 2, 3, 4, 14, 15, 16, 17, 18	0.777778	0.888889	1.000000	1.111111	1.222222	1.333333	1.444444	1/9 n
5, 6, 7, 8, 9, 10, 11, 12, 13	1.072956	1.094318	1.118034	1.143959	1.171946	1.201850	1.233534	1/18 N
19	0.388889	0.444444	0.500000	0.555556	0.611111	0.666667	0.722222	1/18 n
20	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1

ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS								
Between horizontal and diagonal members	69	66	63	61	59	56	54	18/n = tan a
Between diagonal members	42	48	54	58	62	68	72	180 - 2a
Between diagonal and vertical members	21	24	27	29	31	34	36	90 - a
Between vertical and horizontal members	90	90	90	90	90	90	90	90

TRUSSES - STRESS COEFFICIENTS, LENGTH COEFFICIENTS & ANGLES - FLAT WARREN

10 PANELS AT BOTTOM



$n = \frac{L}{H}$ $N = \sqrt{n^2+400}$

To find the stress in any member when the truss is loaded at:

1. TOP - multiply the panel point load P by the stress coefficient under P
2. BOTTOM - multiply the panel point load p by the stress coefficient under p
3. TOP & BOTTOM - add stresses determined in 1 and 2 above

ALL MEMBERS WHICH ARE IN COMPRESSION MUST BE DESIGNED AS COLUMNS

Compressive members are designated by heavy lines on the sketch and minus sign (-) before coefficients.

To find the length of any member, multiply the height of truss H by the length coefficient under H.

MEMBER	VALUES OF n														GENERAL FORMULAS	
	7		8		9		10		11		12		13			
STRESS COEFFICIENTS																
	P	p	P	p	P	p	P	p	P	p	P	p	P	p	P	p
1	-3.06	-3.15	-3.50	-3.60	-3.94	-4.05	-4.38	-4.50	-4.81	-4.95	-5.25	-5.40	-5.69	-5.85	- 35/80 n	- 36/80 n
2	-5.51	-5.60	-6.30	-6.40	-7.09	-7.20	-7.88	-8.00	-8.66	-8.80	-9.45	-9.60	-10.24	-10.40	- 63/80 n	- 64/80 n
3	-7.26	-7.35	-8.30	-8.40	-9.34	-9.45	-10.38	-10.50	-11.41	-11.55	-12.45	-12.60	-13.49	-13.65	- 83/80 n	- 84/80 n
4	-8.31	-8.40	-9.50	-9.60	-10.69	-10.80	-11.88	-12.00	-13.06	-13.20	-14.25	-14.40	-15.44	-15.60	- 95/80 n	- 96/80 n
5	-8.66	-8.75	-9.90	-10.00	-11.14	-11.25	-12.38	-12.50	-13.61	-13.75	-14.85	-15.00	-16.09	-16.25	- 99/80 n	-100/80 n
6	-5.03	-4.77	-5.12	-4.86	-5.21	-4.93	-5.31	-5.03	-5.42	-5.14	-5.54	-5.25	-5.67	-5.37	- 19/80 N	- 18/80 N
7	-4.24	-3.71	-4.31	-3.77	-4.39	-3.84	-4.47	-3.91	-4.57	-3.99	-4.66	-4.08	-4.77	-4.17	- 16/80 N	- 14/80 N
8	-3.18	-2.65	-3.23	-2.69	-3.29	-2.74	-3.35	-2.80	-3.42	-2.85	-3.50	-2.92	-3.58	-2.98	- 12/80 N	- 10/80 N
9	-2.12	-1.59	-2.15	-1.62	-2.19	-1.64	-2.24	-1.68	-2.28	-1.71	-2.33	-1.75	-2.39	-1.79	- 8/80 N	- 6/80 N
10	-1.06	-0.53	-1.08	-0.54	-1.10	-0.56	-1.12	-0.56	-1.14	-0.57	-1.17	-0.58	-1.19	-0.60	- 4/80 N	- 2/80 N
11	4.24	4.77	4.31	4.86	4.39	4.93	4.47	5.03	4.57	5.14	4.66	5.25	4.77	5.37	16/80 N	18/80 N
12	3.18	3.71	3.23	3.77	3.29	3.84	3.35	3.91	3.42	3.99	3.50	4.08	3.58	4.17	12/80 N	14/80 N
13	2.12	2.65	2.15	2.69	2.19	2.74	2.24	2.80	2.28	2.85	2.33	2.92	2.39	2.98	8/80 N	10/80 N
14	1.06	1.59	1.08	1.62	1.10	1.64	1.12	1.68	1.14	1.71	1.17	1.75	1.19	1.79	4/80 N	6/80 N
15	0	0.53	0	0.54	0	0.55	0	0.56	0	0.57	0	0.58	0	0.60	0	2/80 N
16	1.66	1.58	1.90	1.80	2.14	2.03	2.38	2.25	2.61	2.48	2.85	2.70	3.09	2.93	19/80 n	18/80 n
17	4.46	4.38	5.10	5.00	5.74	5.63	6.38	6.25	7.01	6.88	7.65	7.50	8.29	8.13	51/80 n	50/80 n
18	6.56	6.48	7.60	7.40	8.44	8.33	9.38	9.25	10.31	10.18	11.25	11.10	12.19	12.03	75/80 n	74/80 n
19	7.96	7.88	9.10	9.00	10.24	10.13	11.38	11.25	12.51	12.38	13.65	13.50	14.79	14.63	91/80 n	90/80 n
20	8.66	8.58	9.90	9.80	11.14	11.03	12.38	12.25	13.61	13.48	14.85	14.70	16.09	15.93	99/80 n	98/80 n
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	-0.25	0	- 1/4	0
LENGTH COEFFICIENTS																
	H		H		H		H		H		H		H		H	
1, 2, 3, 4, 5, 16, 17, 18, 19, 20	0.700000		0.800000		0.900000		1.000000		1.100000		1.200000		1.300000		1/10 n	
6, 7, 8, 9, 10, 11, 12, 13, 14, 15	1.059481		1.077033		1.096586		1.118034		1.141271		1.166190		1.192686		1/20 N	
21	0.350000		0.400000		0.450000		0.500000		0.550000		0.600000		0.650000		1/20 n	
22	1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1.000000		1	
ANGLES (IN DEGREES) BETWEEN MEMBERS FOR USE IN DETERMINING BOLT AND CONNECTOR LOADS																
Between horizontal and diagonal members	71		68		66		63		61		59		57		20/n = tan a	
Between diagonal members	38		44		48		54		58		62		66		180 - 2a	
Between diagonal and vertical members	19		22		24		27		29		31		33		90 - a	
Between vertical and horizontal members	90		90		90		90		90		90		90		90	

DECIMAL EQUIVALENTS

DECIMALS OF A FOOT

FRACTION	DECIMAL	FRACTION	DECIMAL	FRACTION	DECIMAL
1/16	0.0052	4-1/16	0.3385	8-1/16	0.6719
1/8	0.0104	4-1/8	0.3438	8-1/8	0.6771
3/16	0.0156	4-3/16	0.3490	8-3/16	0.6823
1/4	0.0208	4-1/4	0.3542	8-1/4	0.6875
5/16	0.0260	4-5/16	0.3594	8-5/16	0.6927
3/8	0.0313	4-3/8	0.3646	8-3/8	0.6979
7/16	0.0365	4-7/16	0.3698	8-7/16	0.7031
1/2	0.0417	4-1/2	0.3750	8-1/2	0.7083
9/16	0.0469	4-9/16	0.3802	8-9/16	0.7135
5/8	0.0521	4-5/8	0.3854	8-5/8	0.7188
11/16	0.0573	4-11/16	0.3906	8-11/16	0.7240
3/4	0.0625	4-3/4	0.3958	8-3/4	0.7292
13/16	0.0677	4-13/16	0.4010	8-13/16	0.7344
7/8	0.0729	4-7/8	0.4063	8-7/8	0.7396
15/16	0.0781	4-15/16	0.4115	8-15/16	0.7448
1-	0.0833	5-	0.4167	9-	0.7500
1-1/16	0.0885	5-1/16	0.4219	9-1/16	0.7552
1-1/8	0.0938	5-1/8	0.4271	9-1/8	0.7604
1-3/16	0.0990	5-3/16	0.4323	9-3/16	0.7656
1-1/4	0.1042	5-1/4	0.4375	9-1/4	0.7708
1-5/16	0.1094	5-5/16	0.4427	9-5/16	0.7760
1-3/8	0.1146	5-3/8	0.4479	9-3/8	0.7813
1-7/16	0.1198	5-7/16	0.4531	9-7/16	0.7865
1-1/2	0.1250	5-1/2	0.4583	9-1/2	0.7917
1-9/16	0.1302	5-9/16	0.4635	9-9/16	0.7969
1-5/8	0.1354	5-5/8	0.4688	9-5/8	0.8021
1-11/16	0.1406	5-11/16	0.4740	9-11/16	0.8073
1-3/4	0.1458	5-3/4	0.4792	9-3/4	0.8125
1-13/16	0.1510	5-13/16	0.4844	9-13/16	0.8177
1-7/8	0.1563	5-7/8	0.4896	9-7/8	0.8229
1-15/16	0.1615	5-15/16	0.4948	9-15/16	0.8281
2-	0.1667	6-	0.5000	10-	0.8333
2-1/16	0.1719	6-1/16	0.5052	10-1/16	0.8385
2-1/8	0.1771	6-1/8	0.5104	10-1/8	0.8438
2-3/16	0.1823	6-3/16	0.5156	10-3/16	0.8490
2-1/4	0.1875	6-1/4	0.5208	10-1/4	0.8542
2-5/16	0.1927	6-5/16	0.5260	10-5/16	0.8594
2-3/8	0.1979	6-3/8	0.5313	10-3/8	0.8646
2-7/16	0.2031	6-7/16	0.5365	10-7/16	0.8698
2-1/2	0.2083	6-1/2	0.5417	10-1/2	0.8750
2-9/16	0.2135	6-9/16	0.5469	10-9/16	0.8802
2-5/8	0.2188	6-5/8	0.5521	10-5/8	0.8854
2-11/16	0.2240	6-11/16	0.5573	10-11/16	0.8906
2-3/4	0.2292	6-3/4	0.5625	10-3/4	0.8958
2-13/16	0.2344	6-13/16	0.5677	10-13/16	0.9010
2-7/8	0.2396	6-7/8	0.5729	10-7/8	0.9063
2-15/16	0.2448	6-15/16	0.5781	10-15/16	0.9115
3-	0.2500	7-	0.5833	11-	0.9167
3-1/16	0.2552	7-1/16	0.5885	11-1/16	0.9219
3-1/8	0.2604	7-1/8	0.5938	11-1/8	0.9271
3-3/16	0.2656	7-3/16	0.5990	11-3/16	0.9323
3-1/4	0.2708	7-1/4	0.6042	11-1/4	0.9375
3-5/16	0.2760	7-5/16	0.6094	11-5/16	0.9427
3-3/8	0.2813	7-3/8	0.6146	11-3/8	0.9479
3-7/16	0.2865	7-7/16	0.6198	11-7/16	0.9531
3-1/2	0.2917	7-1/2	0.6250	11-1/2	0.9583
3-9/16	0.2969	7-9/16	0.6302	11-9/16	0.9635
3-5/8	0.3021	7-5/8	0.6354	11-5/8	0.9688
3-11/16	0.3073	7-11/16	0.6406	11-11/16	0.9740
3-3/4	0.3125	7-3/4	0.6458	11-3/4	0.9792
3-13/16	0.3177	7-13/16	0.6510	11-13/16	0.9844
3-7/8	0.3229	7-7/8	0.6563	11-7/8	0.9896
3-15/16	0.3281	7-15/16	0.6615	11-15/16	0.9948
4-	0.3333	8-	0.6667	12-	1.0000

DECIMALS OF AN INCH

FRACTION	DECIMAL
1/64	0.015625
1/32	0.03125
3/64	0.046875
1/16	0.0625
5/64	0.078125
3/32	0.09375
7/64	0.109375
1/8	0.125
9/64	0.140625
5/32	0.15625
11/64	0.171875
3/16	0.1875
13/64	0.203125
7/32	0.21875
15/64	0.234375
1/4	0.250
17/64	0.265625
9/32	0.28125
19/64	0.296875
5/16	0.3125
21/64	0.328125
11/32	0.34375
23/64	0.359375
3/8	0.375
25/64	0.390625
13/32	0.40625
27/64	0.421875
7/16	0.4375
29/64	0.453125
15/32	0.46875
31/64	0.484375
1/2	0.500
33/64	0.515625
17/32	0.53125
35/64	0.546875
9/16	0.5625
37/64	0.578125
19/32	0.59375
39/64	0.609375
5/8	0.625
41/64	0.640625
21/32	0.65625
43/64	0.671875
11/16	0.6875
45/64	0.703125
23/32	0.71875
47/64	0.734375
3/4	0.750
49/64	0.765625
25/32	0.78125
51/64	0.796875
13/16	0.8125
53/64	0.828125
27/32	0.84375
55/64	0.859375
7/8	0.875
57/64	0.890625
29/32	0.90625
59/64	0.921875
15/16	0.9375
61/64	0.953125
31/32	0.96875
63/64	0.984375
1"	1.000

WHERE ADDITIONAL LUMBER INFORMATION MAY BE OBTAINED

THIS publication is a part of the service to distributors and consumers of lumber sponsored by the National Lumber Manufacturers Association. It is suggested that those desiring additional information regarding the respective species of wood write the following regional associations:

American Walnut Manufacturers Association ..... **Chicago, Ill.**
American Walnut.

Appalachian Hardwood Manufacturers, Inc. ..... **Cincinnati, O.**
Appalachian Ash, Basswood, Beech, Birch, Butternut, Chestnut, Cherry, Elm, Hickory, Maple, Yellow Poplar, Red Oak, White Oak, Walnut.

Hardwood Dimension Manufacturers Association ..... **Louisville, Ky.**
American Walnut, Ash, Basswood, Beech, Birch, Butternut, Chestnut, Cherry, Elm, Hickory, Maple, Yellow Poplar, Red Oak, White Oak, Hemlock, Tamarack, White Pine, Cypress (yellow), Cottonwood, Gum (black), Gum (red and sap), Hackberry, Magnolia, Pecan, Persimmon, Sycamore, Tupelo, Willow.

Mahogany Association, Inc. ..... **Chicago, Ill.**
Mahogany.

Maple Flooring Manufacturers Association ..... **Chicago, Ill.**
Maple, Beech and Birch Flooring.

Northeastern Lumber Manufacturers Association ..... **New York, N. Y.**
Northern White Pine, Norway Pine, Eastern Spruce, Balsam Fir, Northern Hardwoods.

Northern Hemlock and Hardwood Manufacturers Association ..... **Oshkosh, Wis.**
Hemlock, Birch, Maple, Basswood, Elm, Ash, Beech, Tamarack, White Pine.

Northern Pine Manufacturers Association ..... **Minneapolis, Minn.**
Northern White Pine, Norway Pine, Eastern Spruce, Tamarack.

Red Cedar Shingle Bureau ..... **Seattle, Wash.**
Red Cedar Shingles.

Southern Cypress Manufacturers Association ..... **Jacksonville, Fla.**
Tidewater Red Cypress.

Southern Hardwood Producers, Inc. ..... **Memphis, Tenn.**
Ash, Basswood, Beech, Cypress (yellow), Cottonwood, Elm, Gum (black), Gum (red and sap), Hackberry, Hickory, Maple (soft), Magnolia, Oak (white), Oak (red), Poplar, Pecan, Persimmon, Sycamore, Tupelo, Willow.

Southern Pine Association ..... **New Orleans, La.**
Longleaf and Shortleaf Southern Pine.

West Coast Lumbermen's Association ..... **Seattle, Wash.**
Douglas Fir, West Coast Hemlock, Sitka Spruce, Western Red Cedar, Port Orford Cedar.

Western Pine Association ..... **Portland, Ore.**
Ponderosa Pine, Idaho White Pine, Sugar Pine, Larch, Douglas Fir, White Fir, Engelmann Spruce, Red Cedar, Incense Cedar.

The Veneer Association ..... **Chicago, Ill.**

NATIONAL LUMBER MANUFACTURERS ASSOCIATION

1337 Connecticut Ave., Washington, D. C.

FIELD OFFICES

Chicago New York New Orleans San Francisco

COOPERATING ORGANIZATIONS

National Hardwood Lumber Association ..... **Chicago, Ill.**
National-American Wholesale Lumber Association ..... **New York, N. Y.**
National Retail Lumber Dealers Association ..... **Washington, D. C.**
National Association of Commission Lumber Salesmen ..... **Cleveland, O.**
National Door Manufacturers Association ..... **Chicago, Ill.**
National Association of Hardwood Wholesalers ..... **Chicago, Ill.**
National Wholesale Lumber Distributing Yard Association ..... **Baltimore, Md.**

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WHERE ADDITIONAL LUMBER INFORMATION MAY BE OBTAINED

THIS publication is a part of the service to distributors and consumers of lumber sponsored by the National Lumber Manufacturers Association. It is suggested that those desiring additional information regarding the respective species of wood write the following regional associations:

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